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On Doing a Tough Job...*Well*

It's no mere matter of luck that our American freight and passenger cars are being well cared for, and kept running. It's a plain case of hard work plus skill and ability. Manufacturers, engineers, fleet owners and service men have worked together to maintain America's automotive transportation. Difficulties have been abundant; and each new day has brought new problems. Yet from day to day the Service Industry has met the job and handled it well.

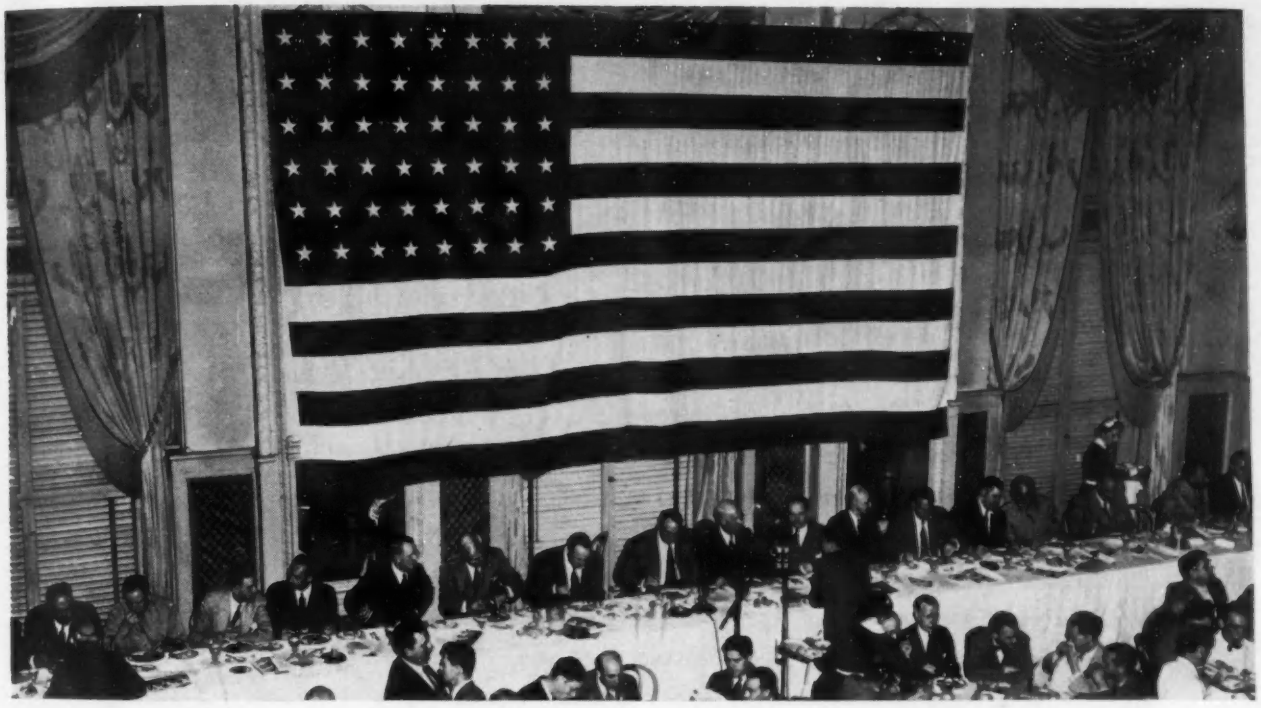
Bendix is proud to be a part of this nationwide teamwork. This Division is cooperating to the fullest possible extent with necessary replacement parts, and with specific service and maintenance information. Working together with the rest of the Industry, we pledge ourselves to continue this policy, pooling our resources and our thinking to the sole end of supporting our national effort for quick victory. For copies of our new service manual, "ABC of Vacuum Power Brakes", write...

BENDIX PRODUCTS DIVISION
South Bend, Indiana

Products made by this division serve with "The Invisible Crew"—all the precision instruments built by the 15 Bendix Divisions—on war duty with our fighting crews on every front.

THE INVISIBLE CREW
Precision Equipment by Bendix
AVIATION CORPORATION

ACWP Annual Meeting Hears Nelson Praise Industry's War Production



Head table at Automotive Council for War Production Dinner in Detroit on July 10

VASTLY expanded operations were revealed by the Automotive Council for War Production at its first annual meeting in Detroit on June 10, when the automotive industry's great war production organization reported to members its ahead-of-schedule contribution to armament production progress and played host to War Production Board Chairman Donald M. Nelson and Robert Nathan, chairman of the WPB Planning Commission.

■ War Production Viewed

Plant visits to see military equipment production in action took members and guests in separate groups to the Ford River Rouge, DeSoto, Cadillac, Kelsey-Hayes, Pontiac, Yellow Truck & Coach, Murray, Fisher, Hudson, Dodge, Chrysler, Briggs, Packard, and GM Detroit Diesel plants.

At a luncheon which followed the plant visits, Robert F. Black, ACWP vice president presided, while speakers were C. C. Carlton, Paul Garrett, Robert Nathan and Blair Moody of the *Detroit News* Washington Bureau.

Donald M. Nelson was the chief speaker at the dinner which wound up the day's proceedings and WPB Automotive Branch Chief Ernest Kanzler was toastmaster.

The ACWP report to its members showed clearly how dynamically the organization is fulfilling its avowed single-purpose mission "to expedite the industry's output of war material." A War Products Division, the report revealed, is carrying forward activity which centers around problems on production techniques, tooling, subcontract facilities, materials shortages and sources, and labor supply. The principal endeavors of the ACWP Military Vehicles Division are indicated by the designation of the subcommittees to the Governing Board of this group – production, engineering, parts and service, and education.

■ Washington Reports Vital

A Washington Reporting Service, designed to furnish member companies with information they might expect from a combined personal representative and specialized automotive reporter, pays special attention to items mentioned only casually or not at all in the newspapers.

Statistical and Research Services develop pertinent statistical and economic information, while a Contract Informa-

Highlights of Nelson's Talk to ACWP Annual Dinner

"The automotive industry has made a truly fine record since Pearl Harbor . . . . . Today it is so thoroughly a war industry that it is sometimes hard to remember that it ever was anything else."

Conversion of plants to production of war goods and adaptation of mass production to manufacture of war implements which previously had been basically hand-made articles no longer look like deep and perplexing problems. "Those problems have vanished because we have solved them."

Production of war goods this year will total about $45 billion; next year 70 to 75 billion. "In this great program a major role has been assigned to the automotive industry. When peak rates of production are reached . . . . it will be producing war goods at the rate of 12 billion dollars a year . . . . . This is three times as large as the industry's estimated 1941 sales of 4 billions; and it will represent approximately one-sixth of the entire war production effort of the whole United States."

"Utilization of existing facilities is still, in a number of instances, relatively low. The industry still possesses a large number of idle machine tools and the job of making these available for use outside their old lines has little more than begun . . . . . We cannot afford to use either man-power or materials to make any new tools if there is a possible chance to get the needed work done by tools which are already in existence."

"Continue to be ingenious. Never for a moment let up in your search for ways of doing more, faster, with less. You have the chance to revolutionize the whole art of producing for this war."

"The direction of the national economy as a whole must, I think, rest in civilian hands . . . . . That does not mean for a moment that our civilian economy will be pampered. On the contrary, our civilian economy for the rest of this war will operate at an efficiency level and no higher."

"We have got to find ways of making the maximum quantities of arms and munitions out of a minimum quantity of materials – and making them faster than we ever dreamed of making them before . . . . .The greatest single contribution which the automotive industry will make to our war effort will come right in that connection."

Chatting at ACWP Meeting were: (left to right) – C. E. Wilson, W. S. Knudsen, Donald M. Nelson and K. T. Keller

tion Service aids companies seeking war work.

Other ACWP services include a Central Reference Department, equipped to supply information on legislative, judicial and administrative problems and a Salvage and Conservation Committee which is working out a simple, effective program to insure the proper handling of every bit of scrap material for effective use in the war program.

Newest ACWP service to be announced takes the form of a publication, "Production Information," which will explore methodically every source of technical information and place that information in concise form before those men in the industry who need it. This is designed as an additional means of speeding up the exchange of information to help win the war.

Reporting to members, ACWP President Alvan Macauley reiterated the aim as being "to aid every automotive plant in an all-out total effort on the most efficient and productive basis"; stated that the ACWP contribution to war effort has received the praise of the chiefs of armed services and the War Production Board; and concluded that: "No industry ever demonstrated more dynamic power in meeting emergency demands."

The ACWP has particular interest for SAE members because of the close ties of cooperation which the Society has established with this first commercial group ever to include representatives of every part of the automotive field. The Society is represented on the ACWP Board of Directors by Past President A. T. Colwell; representatives of the SAE War Engineering Board are sitting as liaison technicians with ACWP product groups; and SAE staff members have been cooperating with ACWP staff representatives since the inception of the latter organization.

SAE Coming Events

Aug. 20-22	West Coast T&M Meeting Biltmore Hotel – Los Angeles, Calif.
Oct. 1-3	National Aircraft Production Meeting (and Aircraft Engineering Display) Hotel Biltmore – Los Angeles, Calif.
Oct. 7-8	National T&M Meeting Hotel Pennsylvania – New York
Oct. 22-23	National Fuels & Lubricants Meeting Tulsa Hotel – Tulsa, Okla.
Jan. 11-15, 1943	War Production-Engineering Meeting (and Engineering Display) Book-Cadillac Hotel – Detroit, Mich.

The Smaller War Plants Corp. cannot be the miraculous balm that will heal all the industrial wounds resulting from turning factories into arsenals. There are bound to be casualties. The act says in part:

". . . to mobilize aggressively the productive capacity of all small business concerns, and to determine the means by which such concerns can be most efficiently and effectively utilized in war production . . ."

If we are a first-aid outfit, we are primarily to aid war production, and intend to do that by using the productive capacity of small business concerns.

It is quite clear, as Mr. Donald Nelson has said, that we are not a relief agency. We are wholly sympathetic to the problems of small business, and we believe we shall find ways to spread war work more extensively into the field of small business. Until that is accomplished there will be no spectacular announcements from the Smaller War Plants Corp.

Excerpts from a statement by Lou E. Holland, chairman, Smaller War Plants Corp.

WPB 'Realigned' in New Shakeup, With Its 'Old Guard' At The Wheel

AS SWEEPING in some respects as several of the previous reorganizations of the nation's war effort, the new "realignment" of the War Production Board (July 8) appears to be headed toward functionalism at last. Policy determinations have been divorced from operations – at least on paper.

Highlights:

- WPB will concentrate its principal operating effort on materials controls, and
- Army and Navy will extend even further into the details of procurement and stimulation of production. The Navy and Maritime Commission have held hard upon this course from the beginning; the reorganization of the Army, with its Services of Supply, headed that military service in that direction. Army expansion in this field has been rapid, with a number of leading manufacturers and production engineers in new key posts. Several of the most important are SAE members, many are men with automotive manufacturing background.

Personalities:

- Donald Marr Nelson, who has been emerging a stronger man with each battle in the nation's arms struggle, is still the WPB boss. But the "Arsenal of Democracy" has in fact become the Arsenal of the United Nations, and he has delegated the responsibility for running WPB in his enforced absences to:
- William L. Batt, SAE member who has guided the nation's raw materials destinies for more than two years. As vice chairman of WPB, Mr. Batt will be expected to be Mr. Nelson's *alter ego*, helping him to determine overall policies and to supervise operations.
- James S. Knowlson, also from the automotive industry, is the other vice chairman, and is in charge of Program Determination. His job has been variously interpreted as "policy man," "coordinator of requirements," and "procurement expediter." Mr. Knowlson takes over the chairmanship of the Requirements Committee, relinquished by Mr. Batt who continues to be a member thereof.
- Amory Houghton, formerly deputy chief of the Bureau of Industry Branches, under Philip D. Reed who in turn reported to Mr. Knowlson, is director general for Operations. His bailiwick is as big as all WPB, including the whole gamut of materials, commodities, and industry branches and units, and their respective advisory committees. Numerous Industry and Commodity Divisions will be set up, manned by those executives who have been doing this work, but in some cases reorganized on the basis of his judgment and experience.

Reorganization:

Also under Mr. Houghton will be the old present functions of Industry Advisory Committees, Bureau of Industrial Conservation, and Priorities. These three now will be divisions, and to them has been added:

- Facilities Utilization Division, which will seek to search out unused plants that can be turned over to war work. This is reversing the program of the defunct Division of Contract Distribution whose career from Mahorney-to-Odlum-to-Wheeler was an unhappy one.
- Inventory Control Division, which will take the inventory job from what was the Bureau of Priorities Inventory & Requisitioning Branch under E. A. Tupper. Something new has been added, making six in all.
- Production Engineering Division. Up to press time the SAE Journal could get no substantial consensus as to what its program would be, or who would be chief. Heretofore production *engineering* has been a myth in the war *production* effort, but the confusing organization chart shows a faint glimmer of hope. WPB's former Production Division was so set up as to "insulate" its few practical production engineers from topside.

Reasons why:

- Mr. Nelson has become an international figure in supplying the United Nations, is expected to make frequent trips abroad, and feels that he has chosen deputies who will have the stamina to fight through on his policies.
- As in any new and huge (more than 12,000 employees) organization, doing a new job, organization changes are inevitable when strong and able administrators get things done and prove themselves leaders.
- Too much duplication of effort has bogged action down.
- Too many diverse contacts with Army, Navy, Maritime Commission, and other government officials have confused issues and delayed action.
- As the wheels of production began to turn, and in many cases to spin with unpredicted speed, the old WPB setups proved to hinder, rather than help, the armament program.
- Need of coordinating production facilities with estimated requirements became essential when armament requirements began to multiply and emphasis was changed from tanks, to bombers, to guns, to ships, to road building machinery, and back to something else.

An opinion:

- WPB should be more effective, despite increasing magnitudes of almost every problem confronting it, because:
- The top men have worked long enough together to work together with minimum friction, and
- In many respects the "realignment" is less a product of outside masterminding than of inside planning.

Have YOU An Interest In Foreign Patents ?

To protect the interest of American citizens, now or previously owning any interest in an unexpired enemy-owned patent, Leo T. Crowley, Alien Property Custodian, urges SAE members to report such business relationships on Form APC-2.

Speedy response is asked for such reports, which will also be used to:

- Locate and describe every enemy-owned patent in existence, and
- Obtain detailed information to aid the Custodian to administer all patents seized.

Seizure is a simple procedure: The Custodian advertises the fact that certain patents have been seized in the Federal Register.

Large blocks of patents have been thus seized from time to time, but Mr. Crowley believes that a number of important patents have not been found by investigators.

The form is available at local Federal District Attorney offices, or from the Alien Property Custodian, Washington, D. C.

Enemy patents are being seized at the rate of more than 1000 a month, with July showing well over 5000 because of several large blocks taken over.

Copper Order Revision Due

AMENDMENT to the copper order (M-9-a, Aug. 2, 1941) is soon due to be issued to combine all orders on this materiai and their amendments.

The order has been amended and interpreted to a considerable volume of text, and work is now being done to:

- Simplify the copper use regulations, and
- Plug up several loopholes which might give the user industries the idea that the copper situation has eased off.

An interim extension was ordered by WPB until the draft of the new revision had been approved.

Black Copper

About 1000 tons of black (unrefined) copper, which runs 85 to 90% copper, will be produced under a plan to smelt yellow brass scrap in furnaces of unused plants in a method suggested by the industry.

Estimates of from 10,000 to 15,000 tons of copper a month might be turned into the armament factories if the trial reduction plan succeeds.

Ordnance District Statuses Upped

ARMY ordnance deputy district chiefs have been advanced in status to district chiefs, and the following assignments have been made by Major-Gen. Levin H. Campbell, Jr., new Chief of Ordnance:

Birmingham: Col. Ernest C. Bomar.

Boston: Brig.-Gen. Burton O. Lewis, an SAE member who has been in the Office of the Chief of Ordnance.

Chicago: Brig.-Gen. Donald Armstrong.

Cincinnati: Col. Fred A. McMahon.

Cleveland: Col. Harold M. Reedall.

Detroit: Col. Albert B. Quinton, Jr., formerly in the Office of the Chief of Ordnance.

New York: Brig.-Gen. Walter P. Boatwright, formerly commanding officer, Frankford Arsenal, Pa.

Philadelphia: Col. David N. Hauseman.

Pittsburgh: Brig.-Gen. Hugh C. Minton, formerly in the Office of the Chief of Ordnance.

Rochester: Col. Frank J. Atwood, formerly in the Office of the Chief of Ordnance.

St. Louis: Col. Merle H. Davis.

San Francisco: Col. Kenneth B. Harmon.

Springfield: Col. Guy M. Drewry, formerly in the Office of the Chief of Ordnance.

Rubber Used To Save Rubber

By developing a collapsible rubber-impregnated pontoon instead of rigid aluminum barges for pontoon bridges, the Army Corps of Engineers estimates that it can save rubber. The paradox:

Because the pontoons can be deflated and nested together, only 36 trucks are needed for hauling a unit for 1080 ft of bridge, instead of the 72 trucks with semi-trailers.

- Add the rubber for 92 rubberized pontoons and total of rubber for tires of the 36 trucks –
- Subtract this from the poundage for tires of the 72 truck-semi-trailer combinations. Answer:
- Saving of 30,000 lb of rubber for one bridge unit.

Furthermore, thousands of pounds of aluminum are saved by the substitution.

The reduction of rubber will again be increased when a new type of synthetic for impregnating the collapsible pontoons is available.

ODT Revises Trucking Rules

REVISIONS of the Office of Defense Transportation General Order ODT No. 3 introduce more flexibility for over-the-road operations by common carriers:

- Trucks must be loaded to capacity over a "considerable portion" of the trip out or back, instead of "75% of capacity" for the return trip.
- Only when all efforts to obtain a full return load, or to lease the truck to another carrier on the return trip, have failed, may a truck be operated empty or at partial load.
- Common-carrier trucks must be operated at a maximum of 40 mph – to save tires and conserve engine and other working parts.

ODT officials have commended the motor transport industry and shippers for staggering schedules, exchange of shipments, pooling traffic or revenues or both, joint loading, and diversion of traffic in accordance with the industry's recommendations for conserving highway transportation facilities.

Industrial Trucks Are Under Control

Industrial power trucks were put under strict control by a General Limitation Order (L-112, July 10) which introduces a prohibition against any but "approved standard" models after Aug. 15.

Proposed production schedules must be reported to WPB twice a month after Aug. 31 (Form PD-385).

In line with previous limitation orders, specified critical materials are eliminated. Army, Navy, Maritime Commission, and War Shipping are exempt for 90 days.

10,000 Join War Metals Research

SAE members figure prominently in the new War Metallurgy Committee of the National Research Council which will "collect data and information requested by either the WPB or the Office of Scientific Research and Development . . . and will plan, present, and supervise definite research projects for either war materials or armaments."

Vice chairman of the new group is Dr. Zay Jeffries, General Electric Co., while other SAE members of the Committee are: Carl Breer, Chrysler Corp.; C. L. McCuen, General Motors Corp.; S. D. Heron, Ethyl Gasoline Corp.; Col. G. F. Jenks, U. S. Army Ordnance Department.

The War Metallurgy Committee has 26 in all, and its chairman is Clyde Williams, director, Battelle Memorial Institute.

Working with the WMC is a 63-man advisory committee which includes in its membership the following SAE men:

Dr. Jeffries, A. L. Boegehold, General Motors Corp., and Willis M. Pierce, New Jersey Zinc Co. Dr. Jeffries is chairman of the Metals Conservation & Substitution group of the advisory committee.

Using the services, facilities, and personnel of all metallurgical research laboratories in the country, the WMC is expected to make available to the Army and the Navy – through either the WPB or the Office of Scientific Research and Development – a combined experience of 10,000 individuals representing well over 125,000 man-years of know-how in this war-vital field.

Order Exempts War Agencies From Ceilings

Contracting officers of war procurement agencies of the government and of allied nations were freed from possible civil or criminal liability under the Emergency Price Control Act of 1942, by terms of Supplementary Order No. 7 (July 6) issued by Leon Henderson, administrator, Office of Price Administration.

Enforcement of the Act would have negated the Act of March 11, 1941, ". . . to promote the defense of the United States."

The Army, Navy, Lend-Lease, Maritime Commission, and numerous other procurement agencies of the government have been negotiating with contractors and suppliers without much regard to the price ceilings established by the OPA. This order, Mr. Henderson said, clarifies their position.

Wood Truck Bodies

Recent estimate of saving steel by the Quartermaster Corps' specifications for all cargo trucks of 1½ tons and larger to have wood bodies runs to 275,000 tons of steel annually – enough to build about 30 large cargo steamers, or nearly 10,000 M-4 tanks.

Army Seeks to Simplify Design of Small Engines

Study is being made by the Army of specifications of hundreds of small industrial and marine gasoline and diesel engines with view of standardizing designs, as much as production schedules will permit, to simplify the huge problem of supplying replacement parts to the battlefields throughout the world.

As the study progresses, it will be reported in the SAE Journal.

Cites Shortages Of Skilled Men

SIXTY-THREE of 138 occupations listed by Paul V. McNutt, chairman, War Manpower Commission, as critical are directly in the automotive field.

The study was based on reports from 11,000 major war industry plants throughout the country. Ratios of the demand of skilled automotive workers to the supply follow:

Toolmaker	31 to 1
Boring-mill operator	16 to 1
Internal-grinder operator	15 to 1
Tool designer	15 to 1
Die maker	14 to 1

Scores of other crafts run from demands of from 5 to 10 to one who are skilled in automotive work.

Nearly 875,000 workers are scheduled for employment in the 11,000 plants, including automotive, during August.

Adjustments will have to be made, and Mr. McNutt suggests:

- Up-grading present employees to more skilled jobs – now;
- Expand on-the-job training programs;
- Train new supervisors to train larger groups than in normal times.

Army Ordnance Has Houseorgan

"Firepower" is the name of a new houseorgan for arsenals and Army Ordnance contractors, edited and issued to help men and women in these plants to do a better job and increase production.

It is designed to be used as widely as possible, and space has been left for imprinting the name of the companies making arrangements with the Ordnance Public Relations Officer for using the publication for their respective employees.

Daily War Cost Is Tapering Off

AVERAGE daily rate of expenditures for war purposes by U. S. government agencies rose in June to $158,600,000. This includes treasury disbursements and amounts paid by the Reconstruction Finance Corp. and its subsidiaries.

This compares with an average daily rate of expenditures of $149,200,000 in May – a gain of 6.3% – indicating a slowing down in the rate of increase. The percentage of gain in May over the previous month was 10.7%, in April 12.0%, and 20.9% in March:

U. S. WAR EXPENDITURES MONTHLY AND DAILY RATE
July 1940 – June 1942
(In millions of dollars)

	Monthly Expenditures	No. of Days Checks Were Paid	Daily Rate
1940			
July	200	26	7.7
August	226	27	8.4
September	250	24	10.4
October	325	27	12.0
November	405	24	16.9
December	508	25	20.3
1941			
January	609	26	23.4
February	633	23	27.5
March	818	26	31.5
April	842	26	32.4
May	924	26	35.5
June	911	25	36.4
July	1026	26	39.5
August	1196	26	46.0
September	1430	25	57.2
October	1665	27	61.7
November	1541	23	67.0
December	1996	26	76.8
1942			
January	2230	27	82.6
February	2391	24	99.6
March	3131	26	120.4
April	3505	26	134.8
May	3880(1)	26	149.2(1)
June	4123(2)	26	158.6(2)

(1) Revised.
(2) Preliminary.

Tire Rationeers To Police Carelessness

Office of Price Administration tire rationing inspectors have been armed with a set of instructions to help them determine whether an applicant has exercised care of his tires. They have been told to watch for apparent abuses of tires, and to recommend refusal of repair and recapping certificates by local boards.

Points:

- Tires have been run too long to make repairing practicable. A set of specifications are being drawn up with the advice of an industry committee on this point.
- Tread piles separated, due to overloading, improper inflation, or excessive speeds.
- Casing has been damaged by running flat.
- Duals have been improperly matched.
- Wheels out of alignment.
- Uneven braking.
- Spotty wear, indicating that tire has been run on bent rim.

Ply separation, broken or exposed bead wires, breakdown of bead reinforcement, and separation of cord in inside ply make tires unfit for recapping, OPA says.

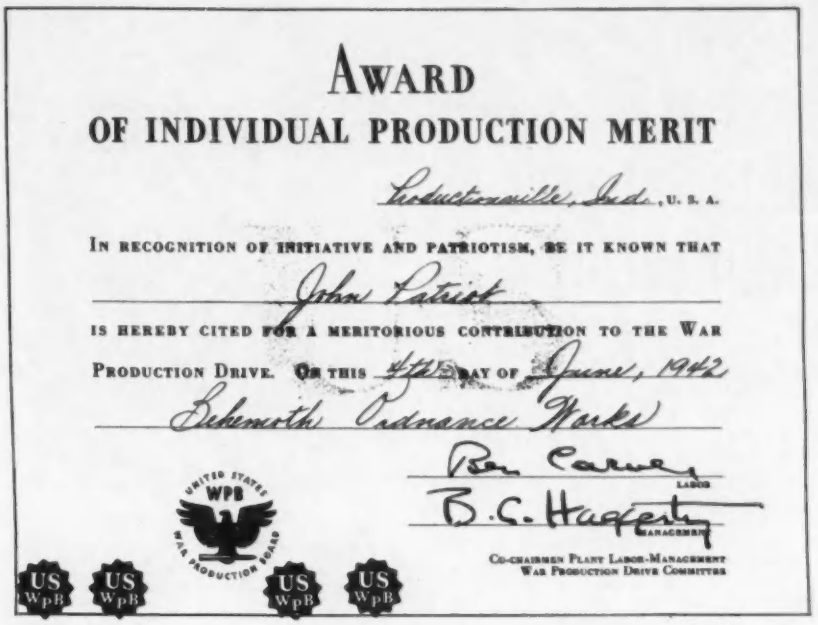
'Production Soldiers' Get WPB Citations

Three individual awards to workmen who devise ways for getting more and better production in their factories will be given by WPB.

Long established as a practice in the automotive and other progressive industries, this plan is to recognize the "production soldier" for meritorious service to his country, Donald M. Nelson said.

Only workers in plants with voluntary labor-management committees formed under WPB's Production Drive Headquarters will be eligible for these awards:

- Award of Individual Production Merit for those suggesting ways to get improved quality, more production, or conservation of materials. Additional seals will be given to workers who repeat. (Facsimile at right).
- Certificate of Individual Production Merit for those making *outstanding* suggestions.
- Citation of Individual Production Merit for those making outstanding suggestions which will have an effect on the entire war effort. Mr. Nelson will sign this, and will award the worker with a distinctive emblem.



AWARD
OF INDIVIDUAL PRODUCTION MERIT

Productionville, Ind., U. S. A.

IN RECOGNITION OF INITIATIVE AND PATRIOTISM, BE IT KNOWN THAT

John Patriot

IS HEREBY CITED FOR A MERITORIOUS CONTRIBUTION TO THE WAR PRODUCTION DRIVE. ON THIS 4th DAY OF June, 1942

Behemoth Ordnance Works

Ben Carney LABOR

B. C. Hagerty MANAGEMENT

CO-CHAIRMEN PLANT LABOR-MANAGEMENT WAR PRODUCTION DRIVE COMMITTEE

US WPB US WPB US WPB US WPB

Australians Are Using U.S. Codes

AMERICAN specifications and standards are entering into Australian war equipment at an ever-increasing rate, despite the fact this equipment is predicated basically on British Imperial specifications, L. H. Hartnett, Director of Ordnance Production for the Australian government, told the SAE Journal last week. Visiting the U. S. to emphasize Australia's need for equipment and methods to do jobs which must be done immediately, Mr. Hartnett said that war exigencies are bringing about very close liaison between Australia and the U. S. in an engineering way.

Mr. Hartnett, an SAE member since 1934 and formerly managing director of General Motors-Holdens, Ltd., stressed Australia's requirements for immediate help, not only in production of many vital items, but also in other phases of engineering and technical work. He asked for data from American engineers about production shortcuts, information on new equipment and production methods, and particularly on methods by which simple standard machine-tool equipment can be adapted to specialized jobs, urging them to send such data immediately to A. Mealand, Australian Director of Machine-Tool Procurement, 25 Broadway, New York, N. Y.

"We need help like the devil," Mr. Hartnett stated very frankly, pointing out that Australia was asking for this help only after having done everything conceivable to speed war output on its own initiative and by its own effort.

Australia's greatest needs, he summarized, are aircraft, aircraft engines, aircraft spare parts, machine tools, and production "know-how," not necessarily in the order named.

Australia is in good shape as regards iron and steel production, Mr. Hartnett said, but emphasized the fact that Australia has a greater number of men per capita in the armed forces than any other nation and that, despite tremendous efforts, it is not yet able to make the grade "in this terribly technical war of workshops."

Scrap Hampers Arms Production

Supply of raw materials is now the most important limiting factor of plane, tank, gun, ammunition, and ship production, says Lessing J. Rosenwald, chief, WPB's Conservation Division.

"As the war production program steps up, need for scrap will increase in direct ratio to the production of war goods," he told the SAE Journal.

Production of 82½ million tons of steel ingots in 1941 required 44½ million tons of scrap, and an additional 17 million of iron and steel scrap was used by iron foundries and blast furnaces making pig and other iron products. Thus a total of about 61 million net tons, or about one-half of the raw material needed to make the 99½ million tons of iron and steel products in 1941 was iron and steel scrap. Something like 27 million tons of the 61 million of scrap was collected from general public sources, he estimated.

Ratios of other critical materials in 1941 were:

MATERIAL	TOTAL 1941 NEW SUPPLY SHORT TONS	TOTAL SCRAP IN 1941 NEW SUPPLY SHORT TONS	RATIO OF SCRAP TO TOTAL PERCENTAGE
Aluminum	416,030	94,000	23
Antimony	47,300	21,600	46
Copper (refined)	2,117,500	360,000	17
Lead (incl. antimonial)	1,090,019	213,674	20
Nickel	101,850	11,550	11
Tin	178,528	20,160	11
Zinc	923,300	65,400	7
Rubber	1,441,000	310,000 (reclaimed)	21

Steel Use Tightened

Steel, the use of which has been restricted by scores of orders during the past 16 months, including allocation orders affecting the Army, Navy, Lend-Lease and other government agencies, was further tightened with an amendment (M-26, July 13) with several hundred additional civilian items banned. No metal or rubber may be used for substitutions in making the products listed.

Several items were added permitting unrestricted use of steel in these products for the government agencies.

Form PD-500 has been designated for appeals to local WPB field offices.

Aircraft and Parts Rerating Permitted

To smooth out military aircraft and parts production curves the Army and Navy have been permitted to rerate preference ratings to AAA, AA-1, AA-2, etc., by WPB, under the terms of Priorities Regulation No. 12.

This is intended to permit more rapid shifts from one to another type of aircraft without disrupting the whole production program.

They're Saying in Washington...

Materials and Engineering

WITHOUT the benefit of an engineering organization, the War Production Board is still putting verbal pressure on *production engineering*. "Production" was a key word in OPM, SPAB, and their successor, WPB. But it remained an orphan word, weakly implemented.

Strategists of the war manufacturing effort now recognize:

- The nation's metal-working capacity, in terms of plant and equipment, is considerably in excess of the prospective materials supply. New facilities and equipment provided by the government during the past 18 months (completed) come to the staggering figure of $6 billion, or about 4½ times the whole plant and equipment account of the 818 automotive companies reporting to the Department of Commerce as of 1939. Over $7 billion is under construction, and nearly $10 billion more is in the original program.

Donald Nelson, WPB's chairman, told the automotive industry that its slogan must be "make more with less." This, in engineering terms means:

- Radical changes in Army and Navy specifications, permitting manufacturers to use less critical materials.
- Closer control of castings so that less metal is hogged out to build heavy parts, and
- Infinitely better scheduling of materials on the part of the government to prevent overstocking in some plants which will create materials shortages in others.

Materials scheduling:

Engineering makes a good topic for speeches, but some WPB officials have yet to learn that there is no magic in such words as "allocations." What is meant is *materials scheduling*, an engineering art practiced in any up-to-date factory. Some industrialists are convinced that strict *materials scheduling* of certain basics such as steel – including shapes, plates, bars, etc. – copper, nickel, and some of the important plastic ingredients will do more to keep the flow of materials running smoothly than any possible combination of theoretical controls on everything. Scheduling of aluminum and magnesium is working out, thanks to WPB's Aircraft Branch's ability to see and solve the problem. As a result, the aircraft program's deficiencies are not very serious at the moment, although some congressmen may find votes in a few (*expose*) hearings soon.

Pressure is on:

In the meantime, manufacturers are caught between the pressures of three potent forces in respect to the cost of armaments:

- National War Labor Board has repeated to industry, in effect, "pay more wages"
- Military procurement officers are calling for faster deliveries of arms, holding cost to be a secondary consideration, and
- The Office of Price Administration is studying profit and loss accounts of 25,000 concerns in its effort to nail cost down. Unless wages are held down, OPA appears determined to take out some of the "fat," if any, to keep prices down.

Review of Axis attempts to enslave free peoples – and reactions of conquered nations told in vivid style. Free: Office of War Information, Washington, D. C.

A&NMB:

The status of the Army and Navy Munitions Board was one of the tingling questions at Donald Nelson's press conference, held to explain the "realignment" of WPB. Admitting that some of the Board's functions were strictly military and must be kept within military operation, other functions appeared to "overlap," and still other functions don't seem to him to be the direct business of the Army or Navy. Observers were expecting that a showdown would come to pass as soon as the materials situation became critical enough for WPB to tell the Army and Navy "no" on some of its program. At least WPB will expect to get more clearly-defined lists of requirements from the military no matter how the WPB vs. A&NMB controversy comes out.

New 'Laboratories':

Rubber has become a No. 1 campaign issue, despite the technical nature of the whole problem of synthetic production. Someone should find inspiration to write a book of rubber chemistry burlesque in the Congressional Record. Estimates and opinions of some of these mushrooming "experts" would explain a part of the confusion that is Washington to unborn generations of mankind. Congressional hearing rooms have become "Capitol Hill laboratories" already.

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Chromium Order Extended

The chromium allocation order (M-18-a, Feb. 4) has been extended indefinitely by Amendment No. 3.

Ordnance Gets Motor Transport

INTERNAL reorganization of the Army's Services of Supply, announced and to be announced soon, include:

- Appointment of three Assistant Chiefs of Staff to Lt.-Gen. Brehon B. Somervell, Commanding Officer, SOS (July 20):

Brig.-Gen. L. D. Clay, for Materials. His Director of Procurement will be Brig.-Gen. William H. Harrison, former vice-president of American Telephone & Telegraph Co., and until recently Director of Production, WPB:

Brig.-Gen. Leroy Lutes, for Operations;

Col. Joe N. Dalton, for Personnel.

- All phases of Motor Transport will be transferred from The Quartermaster Corps to the Ordnance Department. These include design, procurement, supply to troops, and maintenance of motor equipment. The shift is expected to take place about Sept. 1.
- Field agencies of the SOS will hereafter be known as Service Commands, with geographical boundaries corresponding to the nine present Army Corps Areas.

It is expected that a number of SAE members will be involved in these changes. Announcement has been made by General Motors Corp. that Fred C. Horner has resigned as assistant to Chairman Alfred P. Sloan, Jr., to become Chief, Highway Transportation Division, Transportation Service, SOS.

Other announcements of personnel changes will be made in the SAE Journal.

✪

Tungsten Pinch Getting Tighter

Discovered 160 years ago, but developed in the U. S. for electric lamp filaments only 38 years ago, tungsten has become big news because of its scarcity. It was used in the celebrated Damascus sword steel. Old silver mines are being reworked, huge silver mine dumps are being assayed, and creeks in Idaho and California, the "ghost" town of Panamint City on the rim of Death Valley, and other sources are being searched for the once-plentiful material.

Most of the U. S. consumption has been used for high speed tools, but armor and armor-piercing shells, as well as many military automotive parts require tungsten steels. Only a fraction of the available supply is needed for electric lamp filaments and for permanent magnets.

Much of the U. S. supply is shipped to the United Nations munitions factories, and the Army is warning its contractors to use as little of the element as possible.

Asbestos Textile Lid Is Off

Asbestos textiles may be used to manufacture brake lining, clutch facing, and other friction material and industrial packings without an A-10 rating. The material is far in excess of demand as a result of curtailment of the automobile manufacture.

Victory-Grams

SWEEPING STEEL ORDER (M-126) HAS CAUSED SO MUCH TROUBLE FOR MAKERS OF CIVILIAN GOODS THAT IRON & STEEL BRANCH, WPB, HAS ORGANIZED APPEALS UNIT: ADDRESS "APPEALS BRANCH, BUREAU OF PRIORITIES, WPB," FOR RELIEF.

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MAURY MAVERICK, CHIEF, WPB BUREAU OF GOVERNMENTAL REQUIREMENTS, HAS LOCATED MANY UNUSED PIECES OF STATE HIGHWAY EQUIPMENT. THESE CAN BE RENTED BY OTHER STATES FOR ESSENTIAL WAR WORK, HE TOLD SAE JOURNAL

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SIMPLIFICATION OF WPB FORMS IS NOW UNDERWAY: JOSEPH I. LUBIN HAS BEEN NAMED "EDITOR" TO REVISE FORMS WHICH HAVE BEEN THE BANE OF INDUSTRIALISTS. STANDARD PUBLIC ACCOUNTING METHODS WILL BE USED HEREAFTER, WPB SAYS.

★

RUMORS OF CHANGES IN MAXIMUM RENT CEILINGS IN DETROIT WERE SQUELCHED BY PAUL A. PORTER, OPA RENT BOSS. FULL OPPORTUNITY FOR HEARINGS WILL BE PROVIDED FOR BEFORE ANY CHANGES ARE MADE, HE SAID.

★

TWENTY LONDON BUSES WILL BE HAULING MINIATURE ANTHRACITE FURNACES TO PROVIDE PRODUCER-GAS FOR FUEL. A NUMBER OF LORRIES (TRUCKS) ARE SO EQUIPPED TO SAVE GASOLINE.

★

MASTERFUL EDITING JOB COMPLETED BY COL. A. J. BROWNING REDUCED 1500 PAGES OF ARMY PROCUREMENT REGULATIONS TO 100. JOB DONE UPON ORDERS OF LT.-GEN. SOMERVELL, SOS BOSS, WHO HATES RED TAPE.

★

STUPENDOUS TRAFFIC SCHEDULING JOB OF ODT TO SUPPLY MANY NEW POWDER PLANTS HAS BEEN HANDLED BY ALCOHOL TRAFFIC MAN "DRAFTED" BY JOSEPH B. EASTMAN, ODT BOSS. REPORT (PM-3769) IS A TRANSPORTATION EPIC.

★

"AMERICA'S TRUCKS–KEEP 'EM ROLLING," A BOOKLET OF MAINTENANCE ADVICE, HAS GONE TO NEARLY 1,000,000, AND IS AVAILABLE FROM LOCAL OFFICES, OFFICE OF DEFENSE TRANSPORTATION.

Motor Carriers May Swap Data

JOINT information offices from coast to coast to aid motor carriers to step up their efficiency have been authorized by the Office of Defense Transportation.

Aims:

- To make it easier for common, contract, and private carriers to comply with ODT's truck and tire conservation orders by disseminating orders and interpretations.
- To aid the carriers to get information about available, little used trucks.
- To disseminate information of goods to be shipped.

Setup:

- The offices will be governed by committees or boards to be selected in each area by the carriers, and will have a manager named by these governing committees. ODT holds the power of veto on personnel.
- Cost is to be shared by participating carriers.

Any group of carriers may apply to John L. Rogers, director, Motor Transport Division, ODT, Washington, whose office clears such cooperative efforts through the Anti Trust division, Department of Justice.

V-Belts Under Critical Study

To meet the growing shortage of natural rubber for V-belts, a vital part in tactical and combat military automotive equipment, a new Subcommittee VI of the V-belt manufacturers and automotive users has just been appointed under SAE-ASTM Technical Committee A on Rubber.

The purpose is to prepare standard V-belt tests and the selection of suitable alternate materials from the recently adopted SAE classification of synthetic stocks (SAE Journal, June, 1942) and natural stocks (SAE Journal, July, 1942).

New Production Data Bulletin

To rapidly exchange production techniques for armament manufacture, the Automotive Council for War Production is issuing a new bulletin, "Production Information." This will be available from the Council's headquarters, New Center Building, Detroit.

Edited by W. F. Sherman, an SAE member who has been Detroit Editor, "Iron Age," for several years, the publication will compile technical facts and ideas from all available sources. Confidential information will be made available to "authorized" persons in order to speed the "know how" to increase rates of production.

Cutters Invoke Diamond Shortage

Although there is no shortage of small industrial diamonds, there is a serious shortage of diamond cutters to shape them for wire drawing dies. Concurrently, the Diamond Die Order (M-181, July 1) was issued by WPB and a clause was inserted in the New York Diamond Workers Apprenticeship Standards which gives disabled war veterans special consideration to learn the art of diamond cutting.

More than 95% of all gem cutting in this country is done in New York. The Netherlands, Belgium, and Czechoslovakia led the world in precious stone cutting in peacetimes.

Detectors, radios, and fire control apparatus now under contract for the armed forces need thousands of miles of fine wire which is drawn through diamond dies.

Even 'Moly' Is Becoming More Scarce for Alloys

Molybdenum, "ace in the hole" among strategic materials, is becoming so scarce that several of the military services are advising their contractors to go easy with this alloying material.

The Molybdenum Order (M-10, March, 18) was issued as a warning, but the large use of the material in the National Emergency (NE) specifications has made serious inroads on the domestic supply, and shipments to Allied nations have cut deeply into supplies.

Canadian Controls Eased by WPB Order

Controls have been so drastic that flow of strategic materials across the line to Canada all but stopped, so WPB has issued Priorities Regulation No. 14 (July 8) excepting the Canadian counterparts of the Army, Navy, and Maritime Commission from the restrictions of limitation and conservation orders.

Self-Inventory Of Drive-Yourself

The 5000 automobiles owned by drive-yourself companies are going to be inventoried, together with their tires, tubes and spares, and it's going to be done by the rental industry for the Office of Defense Transportation.

Nearly 1,600,000 customers used this service last year, and about 3,500,000 persons were transported in the 5000 cars of 500-odd companies.

T&M Committees Speed Projects for ODT

FUNCTIONING entirely at the direction of the Office of Defense Transportation, the SAE Transportation and Maintenance Activity has set up 29 subcommittees to develop data on various phases of motor-vehicle maintenance and operation. To consolidate the efforts of these groups, T&M Vice President J. Y. Ray looks to his Coordinating Committee of which W. J. Cumming, now chief of the Maintenance Section of the Motor Vehicle Branch of ODT, is chairman.

For many months now, under Mr. Cumming's direction, this Coordinating Committee has held meetings every two weeks, scanning closely the progress of the various subcommittees, energizing new groups as new ODT demands arise and dove-tailing the work of each group with that of the others. Attendance at these bi-monthly gatherings tends to vary with the particular agenda in hand, and subcommittee chairmen frequently sit with the Coordinating Committee to discuss special problems in detail.

Here, below, is a typical Coordinating Committee meeting. At the lower right is a typical subcommittee group.

A Bi-Monthly Meeting of the T&M Coordinating Committee

Left to right: D. K. Wilson, N. Y. Power & Light Corp.; E. P. Gohn, The Atlantic Refining Company; M. E. Nuttila, Cities Service Oil Co.; W. J. Cumming, Chairman, Office of Defense Transportation; J. Willard Lord, Chairman of Committee No. 17, Atlantic Refining Co.; Henry Jennings, SAE Staff; Ervin N. Hatch, Chairman of Committee No. 14, American Brakeblok Division. Absent from this Meeting were Gavin Laurie, J. Y. Ray, S. B. Shaw, E. W. Templin, T. L. Preble, W. A. Taussig and Austin Wolf.

Meeting of T&M Committee on "Pistons to Fit Reconditioned Cylinders," July 7, at the Engineers' Club, Philadelphia, Pa. (Left to right): E. W. Whitman, K & G Auto Parts, Inc.; E. P. Gohn, The Atlantic Refining Co.; E. H. Brakelock, Quaker City Motor Parts; J. E. Higgins, Chairman, Autocar Sales & Service; H. L. Eberts, Small Electric Motor, Ltd.; G. W. Johnson, Bowman Dairy Co.; H. L. Ferris, Autocar Sales & Service Co. Absent from this meeting was Floyd Patras, Southwestern Greyhound Lines.

About SAE Members

SAE President **A. W. HERRINGTON** has been elected to serve for three years as a director of the American Society of Military Engineers. Mr. Herrington was technical adviser to Col. Louis A. Johnson on the recent American Economic Mission to India, and is president of the Marmon-Herrington Co., Indianapolis.

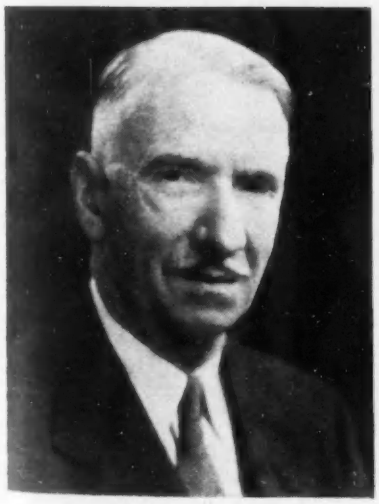
E. S. **CHAPMAN,** formerly vice president and a director of the Plymouth Division, Chrysler Corp., Detroit; and chief of light ordnance, Office of Production Management, Washington, recently became deputy chief in the industrial service of the Army Ordnance Department, Arlington, Va. Mr. Chapman was a vice president of SAE for the Production Activity.

T. W. SIERS, who had been superintendent of maintenance, Canadian Airways, Ltd., Norwood, Man., Canada, is now general supervisor of repair plants, Canadian Pacific Air Lines, Ltd., Windsor Station, Montreal, Que.

RODGER J. EMMERT factory manager of the Yellow Truck & Coach Mfg Co., Pontiac, Mich., is now vice president, in addition to his position of factory manager.

J. M. ORR has left the Philadelphia Co. & Subsidiary Companies, Pittsburgh, where he was assistant to the president, and has joined the Duquesne Light Co., also of Pittsburgh, in the same capacity.

G. C. GRIDLEY has been elected president and general manager of the Mechanics Universal Joint Division of the Borg-Warner Corp., Rockford, Ill. Mr. Gridley has



G. C. Gridley

been vice president and works manager of the Mechanics Universal Joint Division, and has served with this company since 1916.

MAX H. SCHACHNER is now technical chief of the power section, U. S. War Department, Signal Corps General Development Laboratory, Fort Monmouth, N. J. In civilian life Mr. Schachner had been general sales manager of the diesel engine division, General Motors Sales Corp., Detroit.

Formerly assistant chief engineer, Olds Motor Works, Lansing, Mich., **JAMES DYKSTRA** has been named administrative engineer of the Oldsmobile Division of General Motors.

ARCH A. WARNER has been advanced from assistant works manager of the Mechanics Universal Joint Division, Borg-Warner Corp., Rockford, Ill., to the position of works manager.

L. CLAYTON HILL has joined the executive staff of American Metal Products Co., Detroit, where he will devote himself

L. Clayton Hill

primarily to manufacturing operations. The company makes tubular and stamped products for the automotive industry and is heavily engaged on war assignments. Mr. Hill recently resigned as vice president of the Murray Corp. of America, Detroit.

GEORGE A. HANSMAN, formerly chief engineer, Tinnerman Products, Inc., Cleveland, is now engineer at the Parker-Kalon Corp., New York City.

Formerly a designer in the Continental Aviation & Engineering Corp., Detroit, **T. R. SCHULZ** is now experimental engineer at Warner Aircraft Corp., the same city.

JOHN D. WAUGH is now connected with the Lockheed Overseas Corp., Division of Lockheed Aircraft Corp., Burbank, Calif. He had been assistant senior instructor of the propeller department of the Curtiss-Wright Technical Institute, Glendale, Calif.

K. T. KELLER, president of Chrysler Corp., is one of the three industrialists chosen to serve with Bernard M. Baruch, who was chairman of the War Industries

K. T. Keller

Board of World War I, as advisors to Major-Gen. Levin H. Campbell, Jr., chief of the Army Ordnance Department.

Formerly general service manager of the Caterpillar Tractor Co., Peoria, Ill., **EDWARD W. JACKSON** has been named assistant to the president.

RAY D. McMULLIN has joined the Pontiac Motor Division, General Motors Corp., Pontiac, Mich., as mechanical engineer on a special assignment.

THOMAS T. NEILL, formerly ignition engineer, U. S. Army Air Corps, Materiel Division, Power Plant Laboratory, Wright Field, Dayton, has joined the National Advisory Committee for Aeronautics, Washington, as engineering assistant to the director of research.

E. L. MOSSHAMER, formerly automotive engineer in the Ohio District of the Socony-Vacuum Oil Co., Inc., Cleveland, is now in the Armored Force of the U. S. Army, Fort Knox, Ky., as fuels and lubricants adviser.

HERBERT P. REINHARDT has been promoted from gear checker to group leader, International Harvester Co., Indianapolis, Ind.

Formerly an engineer at Pratt & Whitney Aircraft, Division of United Aircraft Corp., **HARRY P. DOBROW** has left to join the War Department, Office of Chief of Ordnance, Tank & Combat Vehicle Division, Arlington, Va., as associate automotive engineer.

JOHN R. McVEIGH, formerly executive engineer, Mawen Motor Corp., New York City, has now joined the aircraft engine division of the Packard Motor Car Co., Detroit.

On instructions of the Canadian Department of Munitions & Supply, a new company, Aircraft Bearings, Ltd., has been formed, to handle all airframe ball bearings for war production and service. **GORDON JANES,** president and general manager of

Gordon Janes

Canadian SKF Co., Ltd., Toronto, Ont., Canada, will also be president of this new organization. He will operate the company and place his staff and facilities at its service.

ERNEST R. STERNBERG, who was sales engineer at the Sterling Motor Truck Co., Inc., Milwaukee, has become business analyst in the War Production Board, Washington.

R. H. UPSON has joined the War Production Division of the H. J. Heinz Co., Pittsburgh, in the capacity of chief aeronautical engineer.

WILLIAM L. BATT, president of SKF Industries, Philadelphia, and chairman of the War Production Board Requirements Committee, was reelected chairman of the American Management Association. Mr. Batt has been in Washington for more than two years devoting his whole time to securing sufficient materials for the war effort. He was deputy to **E. R. STETTINIUS, JR.,** then commissioner of materials of the National Defense Advisory Committee, and

William L. Batt

became head of the Materials Division of OPM, SPAB, and WPB through successive reorganizations of the defense-war management program.

ERNEST M. LUNDA recently was appointed superintendent of maintenance of the Cincinnati & Lake Erie Transportation Co., with headquarters at Dayton, Ohio. Formerly he was bus engineer with the Mack Mfg. Co., Allentown, Pa.

ANTONIO ARIAS, JR. has joined the Continental Aviation and Engineering Corp., Detroit, as engineer. Previously Mr. Arias had been an engineer at the International-Plainfield Motor Co., Plainfield, N. J.

D. G. ROOS, chief engineer of Willys-Overland Motors, Inc., and a past president of the SAE, in a public statement recently stressed the vital need of preserving the automobile industry's service tooling, necessary to assure the continued running of the country's 32,000,000 vehicles for the duration of the war. Half of the nation's transportation facilities, a vital partner in America's all-out production drive, would be crippled by the adoption of any plan to scrap all the

D. G. Roos

tools and dies now in the possession of automobile manufacturers, he said. "Less than 8% of the nation's vehicles are 1942 models," Mr. Roos pointed out. "If we are deprived of the means of replacing broken or worn out parts on the older model trucks and cars now in use, their mortality rate will be high enough to seriously imperil our war effort. In dollars and cents, these tools and dies represent a very small value as salvageable material, but based on their ability to keep our vehicles moving, their worth to the country is incalculable."

EDWIN O. CASENHISER, formerly inspector and supervisor, Aircraft Division, Murray Corp. of America, Detroit, is now chief inspector of the A-20-B Division.

C. G. THATCHER, associate professor, mechanical engineering, Swarthmore College, Swarthmore, Pa., has been given a year's leave from the college and is now director of training at the Dravo Corp., Wilmington Boatyard, where much intensive training is under way in connection with the launching of naval vessels.

Formerly assistant chief inspector of the Aircraft Engine Division, Packard Motor Car Co., Detroit, **JOHN B. SCOTT** is now with the Liquid Cooled Engine Division of The Aviation Corp., Toledo, in the same capacity.

A. L. DORRELL, who had been superintendent of transportation, General Outdoor Advertising Co., Chicago, is now at Fort Bliss, Tex., as head automotive adviser, headquarters 7th Motor Transport District.

WILLIAM B. LIVINGSTON has been named vice president of the Yellow Truck & Coach Mfg. Co., Pontiac, Mich. He has been with this company since 1920 and was formerly assistant to the president.

DONALD K. WILSON, superintendent of Automotive equipment, New York Power & Light Corp., Albany, N. Y., has been selected as a project chairman and member of the T&M Coordinating Committee. Mr. Wilson assumes responsibility for the organization and guidance of committees No. 20, Minimum Cab Dimensions; No. 22, Static Charges and Remedies; No. 23, Load Distribution Factors; No. 25, Steering Maintenance; No. 28, Rebuilding Batteries.

P. W. EELLS, technical sales manager, LeRoi Co., West Allis, Wis., has been made executive engineer of the company. Mr. Eells has been active in the SAE Milwaukee Section for many years, and was chairman of the Section in 1934.

C. F. GRAFFLIN, formerly manager of the Beach Boat Slips Corp., Miami Beach, Fla., is now superintendent of engine overhaul for the Embry-Riddle School of Aviation, Miami.

Formerly in charge of production methods and equipment of the Procurement Division of the Curtiss-Wright Corp., Indianapolis, **OSCAR A. ESKUCHE** has been made head of the Methods and equipment procurement department of the company's Caldwell, N. J., plant.

RAYMOND R. SMITS, who had been body engineer, Sayers & Scovill Co., Cincinnati, is now a draftsman at the Cincinnati Milling Machine Co., of the same city, manufacturers of machine tools.

LESTER M. GOLDSMITH, chief engineer at the Atlantic Refining Co., Philadelphia, has been awarded an honorary degree of Doctor of Science by the Drexel Institute

Lester M. Goldsmith Receives Degree

of Technology in Philadelphia. Mr. Goldsmith graduated from Drexel in 1914.

HOWARD C. BEYER, formerly checker in the engineering department of Ranger Aircraft Engines, Division of Fairchild Engine & Airplane Corp., Farmingdale, L. I., N. Y., has been advanced to chief checker in the engineering department of the company.

BOARDMAN W. MOORE has been promoted from engineering trainee to junior experimental test engineer, at the Wright Aeronautical Corp., Paterson, N. J.

In Military Services

Formerly in the Field Artillery Reserve Corps, Fort Bragg, N. C., **COL. ROBERT O. MONTGOMERY** has been transferred to Headquarters, 104th Infantry Division, Camp Adair, Ore.

COL. F. W. HUNTINGTON, of the New Orleans Port of Embarkation, New Orleans, La., has been transferred from the Camp Harahan Staging Area to Headquarters, Jackson barracks area.

JOHN A. HOWLETT has been granted a leave of absence from Sears Roebuck & Co., Chicago, where he was supervisor of service stations, and is commissioned a major in the U. S. Army Air Forces.

MAJOR GEORGE H. SCHOENBAUM is chief of the petroleum Section, U. S. Army Headquarters, Services of Supply, Resources Division, Standards Branch, Washington. He previously was chief of the fuels and lubricants unit, U. S. Army, Ordnance Department, Washington.

FOSTER D. SHAVER, formerly director of the parts and service department of L. P. Stewart, Inc., Washington, is now a major in the U. S. Army Ordnance Department, and is headquartered at Fort Knox, Ky.

CAPT. MUNSON ELLIOTT, formerly engine representative and sales engineer of the Caterpillar Tractor Co., San Leandro, Calif., has gone overseas and will be engaged in airport construction somewhere.

SIDNEY G. HARRIS has been appointed a captain in the U. S. Army. He has been assigned to the Fuels and Lubricants Section, Storage and Issue Branch, Motor Transport Division, QMC, Washington. Capt. Harris has been manager of the sales engineering department of the Petroleum Solvents Corp., New York City. He was past chairman of the Metropolitan Section.

DANIEL C. KERSHNER has been promoted to rank of captain in the Quartermaster Corps and is on duty as Post Quartermaster at the Long Beach Municipal Airport, Long Beach, Calif., with the Army Air Forces, Ferry Command. Formerly he was an instructor of aeronautical science at the Long Beach Junior College.

CAPT. HARRY PRICE has been called to active duty and is at present assigned to the Office of Chief of Ordnance, Research and Engineering, Washington. Capt. Price was formerly a New York patent lawyer.

EARL W. HAEFNER resigned as manager of the service and parts department of the Airtemp Division of the Chrysler Corp., Dayton, to accept a commission as captain in the Quartermaster Corps, U. S. Army. He reported for active duty at the Holabird QM Motor Base, Baltimore, and was detailed to duty with the 2nd and 3rd echelon demonstration shops. He later was assigned

Earl W. Haefner

as motor maintenance officer in charge of the base shop at the Fort Crook QM Motor Base, Neb. Capt. Haefner also served in World War I.

JAMES W. BILLINGS, JR., has been promoted to the rank of 1st lieutenant, and is in the Ordnance Company, Gowen Field, Boise, Idaho.

LAWRENCE M. ZAUMEYER is a first lieutenant in the Quartermaster Corps of the U. S. Army. He is stationed at the Army Air Base, Alamogordo Training Field, New Mexico. Lt. Zaumeyer is automotive officer commanding the 682nd Q.M. Platoon, light maintenance. Previously he was assistant motor maintenance officer, Salt Lake Army Air Base, Salt Lake City, Utah.

1ST LT. ELMER L. BROWN has been transferred from the U. S. Army Quartermaster Corps in Washington to the Holabird Motor Base, QMC, where he is a member of the staff and faculty of the Motor Transport School.

T. G. MUIR, formerly technical editor of *Commercial Car Journal,* Philadelphia, has been commissioned a first lieutenant in the U. S. Army, and is stationed at the Holabird Motor Base, Baltimore.

VAN TURNER is a first lieutenant in the U. S. Army Air Forces, and is stationed at Balboa Island, Calif. Previously Lt. Turner was editor of the Chexall Division of the Chek-Chart Corp., Chicago.

2ND LT. PAUL L. HAINES is with the 443rd Aviation Ordnance Company, Desert Training Center, Blythe, Calif. In civilian life he had been research engineer at the Standard Oil Development Co., Elizabeth, N. J.

GEORGE POEHLMANN, who had been an engineer at the B. F. Goodrich Co., Akron, Ohio, is now a second lieutenant in the U. S. Army, field artillery school, Fort Sill, Okla.

SAE Member **F. B. DOANE,** vice president of the Magnaflux Corp., Chicago, has written the second edition of "Principles of Magnaflux Inspection," published by Photopress, Inc., Chicago.

Formerly with Continental Aviation & Engineering Corp., Detroit, as design engineer, **C. L. SAVAGE** has joined the Standard Tube Co., also of Detroit, as chief engineer.

W. S. WOLFRAM, formerly an engineer with the Inland Mfg. Division of General Motors, Dayton, has been transferred to the Eastern Aircraft Division, General Motors Corp., Linden, N. J.

GEORGE MARGLIN has been appointed vice president of Aeroflex Laboratories, Inc., Long Island City, N. Y. He retains his position of treasurer of the company.

H. H. McMAHON has severed his connection with the Stromberg Division, Bendix Aviation Corp., South Bend, where he was installation engineer, to join the engineering department of Kinner Motors, Inc., Glendale, Calif.

T. A. O'CONNOR was recently transferred from district sales manager in the passenger car division of the Studebaker Pacific Corp., Los Angeles, to the position of war production representative in the War

T. A. O'Connor
In War Production

Production Division. His duties consist of contacting airplane and aircraft companies on the Pacific Coast for the company. Mr. O'Connor served in World War I in the Motor Transport Corps, and has been associated with the SAE for 20 years.

Wartime requirements are making motor truck haulage much more efficient in terms of safe, speedy, continuous operation, **FRED B. LAUTZENHISER,** technical consultant, War Production Board's Automotive Branch, said at a meeting of the National Safety Council's Institute for Traffic Training in Strathcona Hall, Yale University, recently. "Operators and shippers are recognizing that scientific principles applied to load distribution give results of considerable importance when rubber is scarce and the number of trucks available under the nation's rationing procedure is strictly limited," Mr. Lautzenhiser pointed out. "Trucks, truck-tractors and trailers are being much more intelligently selected and used for war hauling. There are far fewer breakdowns of badly overloaded trucks these days."

CHARLES F. KETTERING, president, General Motors Research Corp., and vice president of General Motors Corp., has been appointed consultant to the War Production Board's Radio and Radar branch. Mr. Kettering is also chairman of the National

Inventors Council, established nearly two years ago to receive and study ideas and inventions for winning the war. Radar is that field of radio engineering devoted to remote control. Army, Navy and civilian developments of radar are closely guarded military secrets. Donald M. Nelson, chairman of WPB, wrote Mr. Kettering: "Our Radio and Radar program has assumed such tremendous proportions that I feel it is now vitally important to have someone of your outstanding capacity and accomplishments in the scientific world to whom we can turn from time to time in the difficult task of meeting the requirements to that program. Your acceptance . . . makes me increasingly confident that the job will be well done, and I wish to take this opportunity of telling you how pleased I am about the arrangement."

NORMAN C. RAABE, automotive engineer, who until recently has been adviser on vocational training in the director's office

Norman C. Raabe
To WPB

of the Civilian Conservation Corps, Washington, has been transferred to the Contracts and Requirements Section of WPB's Automotive Branch, as senior industrial specialist.

WILLIAM J. RICE is in active duty in the U. S. Army. He is stationed at Fort Totten, N. Y. Formerly he was working foreman, Lincoln & Lincoln Zephyr Department, Sol. Schildkraut, Inc., Jamaica, L. I., N. Y.

CHARLES E. CHAMBLISS, JR. is senior production engineer in the U. S. Army Signal Corps, Philadelphia Signal Corps Procurement District. He was previously zone manager in the Fleet Sales Division of General Motors, Pittsburgh.

Formerly factory representative of the Safety Glass Division, the Pittsburgh Plate Glass Co., Detroit, **J. H. ATKINSON** has been transferred to the Pittsburgh office of the company.

GEORGE S. ROTHENBERG, a graduate of the College of City of New York, is now a student mechanical engineer at the Philco Corp., Philadelphia.

Consulting engineer **GLENWAY MAXON, JR.,** is now connected with the T. L. Smith Co., Milwaukee.

LEONARD O. MJOLSNES, formerly an experimental engineer, General Motors Diesel Division, Detroit, has been promoted to the position of company representative for the same company.

Formerly a lubrication engineer, **SAMUEL B. MAGILL** is now with the United Parcel Service, New York City.

CHARLES HAROLD HELLING, formerly research assistant, Eisemann Magneto Corp., Brooklyn, N. Y., is now dynamometer operator in the engineering laboratory of General Motors Diesel Engine Division, Detroit.

ALLEN GUIBERSON, executive vice president, Guiberson Diesel Engine Co., was chairman of the session on Aeronautical Research, June 25, at the Texas Aviation Week conference sponsored by the Agricultural and Mechanical College of Texas and *Southern Flight,* held at College Station, Tex. Governor Coke R. Stevenson, in issuing a proclamation setting the time for the conference, stated that "The State of Texas has become a focal point of military and civilian aviation training, manufacture, and maintenance in the United States." **JAMES D. REDDING,** staff representative, SAE Aeronautics Division, and **HOLLISTER MOORE,** manager, SAE Sections and Membership departments, were speakers on June 27 on Organization of a Texas Section of SAE. Mr. Redding also reviewed the extensive aeronautical standards and materials specifications program.

HAROLD T. McNALLY recently received a B.M.E. degree at the 59th annual commencement of the University of Detroit.

GLENN L. MARTIN has established an endowment fund of $450,000 for an aeronautical research laboratory for the Institute of the Aeronautical Sciences, to be known as the Minta Martin Aeronautical Endowment Fund – named for his mother. In establishing this fund, Mr. Martin said: "The recent gift to the I. Ae. S. of the Long Island home and estate of the late Daniel Guggenheim by his widow will make available to the aeronautical profession facilities for research and study unexcelled by those of any other scientific society. As aeronautical engineers have provided the basis for the fortunate growth of The Glenn L. Martin Co., I wish to show my appreciation by providing the fund, to advance the art and science of aeronautics, and to enable the Institute to take the first steps in using this valuable estate. It is my hope that others will also wish to assist the Institute in creating a great aeronautical center with laboratories, archives and libraries available for research and study. As my mother has for so many years been such a firm believer in the possibilities of the airplane, I hope that her expectations of even greater future developments will result from the uses made of this fund which bears her name." In accepting this gift **MAJOR LESTER D. GARDNER** said, "This endowment is one of the greatest gifts ever made to a scientific society. The Institute is grateful to Mr. Martin, one of its founders, a past president and an honorary fellow, for his generous gift which will permit it to render a service to the nation's war effort."

LOREN E. LURA, who had been tractor instructor in the Automotive Section of the U. S. Army Ordnance School at the Aberdeen Proving Ground, Md., is now plans and training officer in the Bloomington Section Ordnance School, U. S. Army Ordnance Department, at Bloomington, Ill.

BRUCE A. SMITH has joined the Production Branch of the War Department, Office of the Quartermaster General, Washington, as associate materials engineer.

Among the 20 students graduated from the Chrysler Institute of Enginering with degrees of Master of Automotive Engineering, awarded June 25, were these SAE Enrolled Students: **JACK RICHARD DOIDGE, ROBERT W. HALBERG, ROBERT HARMAN SMITH,** and **VAINO J. VEHKO,** all graduating with honors, and **ROBERT HALL LOUGHRAN, YU-KONG MAO, LOREN CLIFFORD SACKETT,** and **HERSCHEL A. WILLIAMS. HARRY T. WOOLSON,** a past president of the Society, and president of the Institute, addressed the seven graduating classes of 80 men who received certificates and diplomas. Among the 41 lecturers of the Graduate School during the ninth school year were five SAE members from other corporations.

COM. C. G. HALPINE is now on duty in the Navy Department, Bureau of Aeronautics, Washington. He had been a member of the air navigation staff of the Weems System of Navigation, Annapolis, Md.

PAUL O'C. LOWEN has accepted a position as field engineer with the Continental Motor Co., Detroit.

CHARLES J. KEIM, who had been design engineer, Oil Well Supply Co., Oil City, Pa., is now mechanical engineer in the production order department of the Dravo Corp., Pittsburgh.

GERALD I. CARLSON has been promoted from service engineer to representative to the Army Air Forces, in sales, service and engineering, for Ranger Aircraft Engines, Division of Fairchild Engine and Airplane Corp., Farmingdale, L. I., N. Y.

WALTER G. CHANDLER, of J. Stuart McLerie, Ltd., Windsor, Ont., Canada, has been advanced to chief engineer. He had been in charge of the engineering operations of this company.

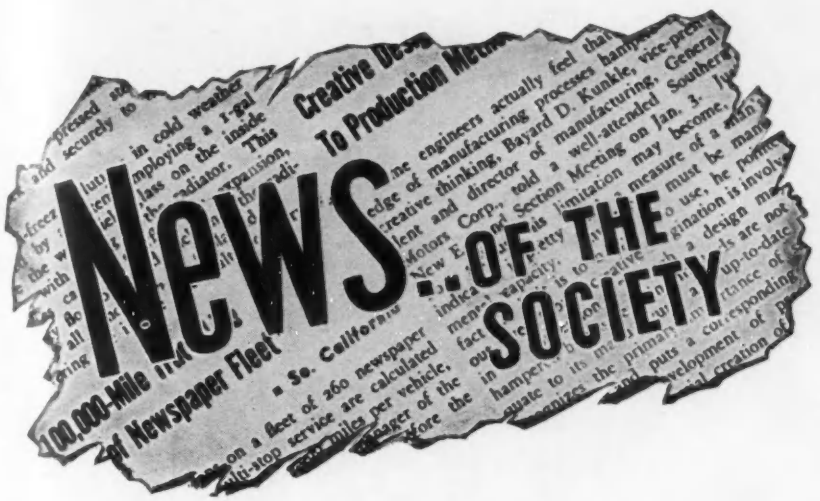
Transfer of **RICHARD L. OBLINGER** to the Cincinnati Division of Wright Aeronautical Corp. from the Paterson, N. J., plant recently took place. He is now working as assistant test equipment engineer. At Paterson he was junior test engineer.

Robert F. Runge

Robert F. Runge, vice president of SKF Industries, Inc., Philadelphia, died July 6 after a prolonged illness. He was 56. In 1906 he graduated from Drexel Institute and went to work in the engineering department of the Hess-Bright Mfg. Co., which later became SKF. His entire business career was spent with SKF and its predecessor, the Hess-Bright firm, becoming vice president in 1920. He joined the SAE in 1917.

H. F. L. Orcutt

H. F. L. Orcutt, managing director of the Gear Grinding Co., Ltd., Birmingham, England, died recently at the age of 80. He started working in a small mechanical engineering shop in Springfield, Mass., in 1880, and in 1912 founded the Gear Grinding Co. He devoted a great deal of time to the development of grinding teeth of spur gears, particularly in connection with motor car gear boxes.



Fleet Operators' Problems Aired at Big T&M Forum

▪ Northern California

SECURING tires is the major problem of the fleet operator today, said Fred H. Chesnut, regional tire rationing chief, OPA, speaking before the Transportation & Maintenance forum on June 9, at the Northern California Section, Hotel Bellevue, San Francisco. Some operators get 50,000 miles of life from a tire, while others get 100,000 miles from the similar tire when operating similar loads over the same route, Mr. Chesnut continued, adding that proper maintenance is the reason, and every vehicle operator – especially truck operators – must apply to practical maintenance methods his own operations. The maintenance items of most importance, according to Mr. Chesnut, are:

1. Proper air pressure;
2. Mating and pairing of same diameters; and
3. Correct alignment.

He concluded with the statement that good tire maintenance required a lot of watching, and suggested assigning one man to check on nothing but tires.

Compounded lubricating oils are showing to advantage in both gasoline and diesel engines, Sidney B. Shaw, of Pacific Gas & Electric Co., said. Charles D. Miller, Market Street Railway Co., reported good use of compounded lube oils in gasoline-engined buses.

Presence of water in lube oil, either originally or due to condensation or due to products of combustion when operating cold, is the probable cause of pitting or corrosion of aluminum pistons, stated various members in answer to a question by Fred W. Twining, Twining Laboratories, of Fresno, Calif.

Questioned regarding availability of spark plugs, Robert M. Ward, Champion Spark Plug Co., said the supply is being greatly restricted and that spark plugs have not had enough attention in the past when servicing engines. Spark plugs should be cleaned, dressed down, and re-gapped every 500 hr, he added.

The outlook for bearings is not bad, said Russel A. Watson, Federal Mogul Corp., pointing out that materials for copper-lead bearings are fully available in this country, and so is silver, although more expensive. Tin is now greatly restricted, however, and as a heavy-duty bearing it was already on the way out before present restrictions appeared, he said.

There is no shortage of replacement automobile batteries, said Mr. Dooling, Exide Battery Co., explaining that the early shortage was due to a scare, and that at present stocks are fairly high, while sales are low. Composition cases in place of rubber cases were in use before the present rubber shortage developed, and he added that if the battery companies can get back all the old batteries, they will be able to recover enough lead and antimony to take care of all those vehicles able to get tires. Rebuilding old batteries is not a very promising answer to the battery problem, said Mr. Dooling in answer to a question, because skilled labor and proper equipment are not available; therefore, new standard commercial batteries will probably continue to be cheaper.

As a conclusion to the meeting, arranged by T&M Chairman Peter Glade, Purity Stores, two moving pictures were shown: "The Unfinished Rainbow," a moving picture in technicolor and sound, told the story of the development problems and progress of the Aluminum Co. of America: "Forward for Freedom," a moving picture produced by Caterpillar Tractor Co., conducted the audience on a tour of recently-built Army camps and airports, and showed the various kinds of earth-moving equipment in use.

Howard Baxter, Winslow Engineering Co., and Sam Boukard, automobile consultant, presented a leather briefcase and a scroll honoring Retiring Secretary William S. Crowell for his 17 years' consecutive service to the Section. Mr. Baxter also introduced the new Section officers for the coming year.

■

William S. Crowell

William S. Crowell retired as Secretary of the SAE Northern California Section after serving the Section in this capacity for 17 years. At the June 9 meeting of the NC Section, fellow members presented Mr. Crowell with a scroll commemorating his invaluable services to the group – following special ceremonies devised for the occasion by Howard Baxter, Sam Boukard, and retiring Section Chairman Charles F. Becker.

Treasurer Lodge Honored by New England Governing Board

▪ New England

Honoring Section Treasurer Albert Lodge, members of the incoming and retiring New England Section Governing Boards journeyed to Greenfield, Mass., for their July 8 meeting. Greenfield is some 135 miles from Boston, and Mr. Lodge commutes regularly from there for Section and Governing Board meetings. Once a year the Board reverses the procedure and brings the meeting to Greenfield.

A brilliant day clouded rapidly at noon as the group met at the Greenfield Country Club. Rain fell in torrents during luncheon and the Governing Board meeting, but halted promptly as the meeting adjourned. The golfers of the party then teed off for 18 holes, accompanied by an interested and non-partisan gallery. Treasurer Lodge would have won the prize, had there been one.

Inspection Trip Winds Up Oregon Section Year

▪ Oregon

An inspection trip through the shops of the Portland Traction Co. and brief talks by executives of that organization, led by President Gordon G. Steele, comprised the June 12 meeting with which the Oregon Section closed its 1941-1942 Section year.

Mr. Steele outlined the methods being used by his organization to meet the changing needs of wartime transportation requirements, while Earle B. Richardson, chief inspector of PTC, discussed the problems brought to his department.

A. B. Ogden, bus shop foreman, emphasized current difficulties in obtaining adequate parts supplies to keep vehicles in proper operation, and Don E. Johnson, equipment engineer, explained the operation of his department.

The PTC served a buffet luncheon for the 43 members and guests in attendance.

Motion Pictures Tell Tank Production Story

▪ SAE Club of Colorado

A series of automotive motion pictures formed the basis of the June 15 meeting of the SAE Club of Colorado. Preceded by

a dinner-business session at the Oxford Hotel, the meeting proper was held at the Hendrie & Bolthoff Mfg. & Supply Co., Denver.

Following a brief outline of Club activities by Virgil H. Tout, the motion pictures were shown. The first, prepared by Perfect Circle Co., dealt with engine maintenance methods, while the second showed tank production in action at the Chrysler tank arsenal.

Record Attendance at Young Talk on Mercedes-Benz Engine

■ Kansas City

Raymond W. Young, chief engineer of the Wright Aeronautical Corp., was the guest speaker at the Kansas City Section meeting held on June 22 in the Continental Hotel. Four hundred seventy-five people came to hear Mr. Young discuss design, characteristics, and properties of the Mercedes-Benz aircraft engine. . . . Among them were more than 100 instructors of various schools in this area who were invited by the Kansas City Section to hear the lecture. At present there are about 2000 Army students attending government engine schools in Kansas City.

Officers of the Army Air Forces and prominent citizens interested in aviation were introduced by Chairman Harold Berg, who officiated.

Raymond W. Young

Developing SAE Dual Rotation Propeller Standard

At the invitation of M. C. Beebe, chairman of Committee P-5, Dual Rotation Propeller Shaft Standards, members of the Aircraft-Engine Accessory Drives Committee E-2, attended a joint meeting on June 24 in New York. This meeting was called for the purpose of getting the engine and propeller manufacturers together to discuss the proposed Aeronautical Standard AS91, for dual rotation propeller shaft ends. A number of dimensional difficulties were solved, and questions, raised as a result of the circulation of the proposed draft of the standard, were discussed. The work on pioneering this standard has been done with the close cooperation of the U. S. Army Air Forces Propeller Laboratory, Wright Field, represented by Lt.-Col. H. M. McCoy, who attended the majority of the meetings, and the Bureau of Aeronautics.

Left to right: C. J. McDowell, Allison Division, General Motors Corp.; Gustav Carvelli and J. G. Larger (guest), both of Wright Aeronautical Corp.; G. N. Cole, chairman of E-2, Pratt & Whitney Aircraft; C. W. Chillson, Propeller Division of Curtiss-Wright Corp.; T. B. Martin, Aeroproducts Division, General Motors Corp.; C. I. Valentine, Army Air Forces (representing Lt.-Col. McCoy); William Waddell, Lycoming Division, The Aviation Corp.; M. C. Beebe, chairman of P-5, and D. Ramaker (guest), both of Hamilton Standard Propellers, Division of United Aircraft Corp.; and E. W. Rentz, Jr., SAE staff.

The Chamber of Commerce rendered its assistance in this meeting, and it goes on record as the largest which the Kansas City Section has ever had – and certainly one of the most successful.

4-Day Meeting to Speed Aircraft Material Specs

More than 50 metallurgists, chemists, and other materials experts representing the Army Air Forces, Navy Department Bureau of Aeronautics, and private aeronautical industry, will be in Denver from Aug. 11-14 to hold a meeting to approve specifications for synthetic rubber, metals, and other materials for building the United Nation's bombers and fighters. This will be the fifth meeting of the SAE Aircraft Materials and Processes Subdivision. The Executive Committee of this Subdivision, consisting of J. B. Johnson, Materiel Center, USA Army Air Forces, Wright Field, Dayton, Ohio; B. Clements, Wright Aeronautical Corp., Paterson, N. J.; L. D. Bonham, Lockheed Aircraft Corp., Burbank, Calif; and Dr. N. E. Woldman, Eclipse Aviation Division, Bendix Aviation, Bendix, N. J., will arrive in Denver several days in advance to plan and complete the details for the meeting. To date this group has developed and approved 221 Aeronautical Material Specifications (AMS), and over one million have been distributed to aircraft procurement officials and the manufacturing industries building aircraft and parts.

Fourteen of a list of more than 100 synthetic rubber specifications developed as emergency compositions by the SAE and the American Society for Testing Materials (See SAE Journal, June, 1942), are believed to be adequate for the aeronautical industry. These synthetics are being tested in several laboratories to determine whether they are adequate for the grueling service of Allied fighters and bombers.

When approved, each synthetic rubber composition will include standard methods of test to determine its quality. Manufacturers will need only to specify the proper Aeronautical Material Specification number. No trade names will be used, thus opening to aircraft manufacturers the whole field of synthetic rubber manufacturers.

Present at Pre-Organization Meeting of SAE Texas Group

Initial steps in organizing an SAE Texas Group were taken June 27 when about thirty SAE members and others interested in an active SAE Group in Texas met on the campus of the Texas Agricultural and Mechanical College on the final day of the Texas Aviation Conference. A number of those present are pictured above. (A meeting to complete the organization was held July 11. See story below.)

Pictured above – at the June 27 gathering – are:

Standing (left to right) C. E. Sisler, student, Texas A & M; R. L. Stephens, student, Texas A & M; H. H. Cherry, student, Texas A & M; James M. Hennessy, student, Texas A & M; Charles G. Robinson, Technical Plywoods; Edwin H. Jackson, Globe Aircraft Co.; W. I. Truettner, professor, Mechanical Engineering, Texas A & M; C. W. Crawford, head of Mechanical Engineering Department, Texas A & M; Carl F. Brockman, Guiberson Diesel Engine Co., Dallas; W. G. Fuller, Globe Aircraft Co., Ft. Worth; J. S. O'Connor, student, Texas A & M; Richard Mark, Lockheed Aircraft Corp., Dallas; J. S. Hopper, professor, Mechanical Engineering, Texas A & M.

Seated (left to right) J. D. Redding, SAE; J. G. H. Thompson, professor, Mechanical Engineering, Texas A & M; Dean Gibb Gilchrist, Dean of Engineering, Texas A & M; Fred Lockwood, Guiberson Diesel Engine Co.; George H. Lacy, Gulf Oil Corp.; M. J. Thompson, University of Texas; Lt. William H. Graham, Jr., U. S. Army; Allen Guiberson, Guiberson Diesel Engine Co.; Hollister Moore, SAE.

SAE Texas Group

Holds Stirring Organization Meeting . . . Aircraft Stressed

EIGHTY odd representatives of Texas aircraft plants attended a meeting on July 11, at the Baker Hotel in Dallas, Tex., and elected Allen Guiberson, executive vice president of Guiberson Diesel Engine Co., Dallas, chairman; Harold Schwedes, factory manager of the North American Aviation Inc. of Texas, Dallas, vice chairman; and W. G. Fuller, factory manager of Globe Aircraft Co. in Ft. Worth, secretary.

August Meeting Scheduled

Plans were completed for a meeting early in August at which organization of the Texas Group of the Society of Automotive Engineers will be completed. Speaker will be A. T. Colwell, vice president of Thompson Products, Inc., Cleveland, Ohio. The local unit will be the first SAE Group to be organized in the deep South, significantly attesting to the increasing importance of the Texas aircraft industry in the national production effort.

A feature of the meeting at which the officers were elected was an address by B. J. Robertson, professor of mechanical and aeronautical engineering at the University of Minnesota, who emphasized the value of SAE to the industry and to the individuals, also.

"I believe the SAE is a necessary factor in American life," Prof. Robertson, who has been a member for many years, declared. "I get more out of SAE than from any other national organization to which I belong. The SAE establishes and maintains the highest standards which have made American engineering the undisputed champion of the world."

SAE Benefits Stressed

Prof. Robertson said the SAE offers great benefits to its members, using its vast library facilities and its publications. He especially referred to two articles in the SAE Journal. "One, 'The Mechanism of Lubrication' written by R. E. Wilson and D. P. Barnard, and published many years ago remains the best source of material on lubrication available," he said, "and another, published in 1940 and written by A. T. Colwell on the subject of valves is a brilliant classic."

Prof. Robertson gave an impromptu talk on the development of aircraft engines during the last ten years, during which the horsepower has just about been doubled, he said. This development began with efforts to increase the air intake with the first approach being an increase in the speed of the engine. This led to impractical propeller speeds, which, in turn, resulted in perfection of reduction gears. Next, blowers and superchargers were added, and the problem especially of the high velocities of the impeller blades has had to be fully solved. Meanwhile, increased engine efficiency has resulted from greater sized cylinders, better combustion, better carburetion, finer fuel and greatly improved lubricants, the latter allowing loads which bearings could never have endured ten years ago.

Prof. Robertson said that other nations, such as Germany, have also had great success in engines, pointing to the Mercedes-Benz as a marvelous piece of machining and craftsmanship. "However," he said, "the German excellence will not endure mass production methods which are providing America's victorious superiority."

He praised the German supercharger for its fluid drive and also the German method of fuel injection, but, he added, America is capable of doing the same job more efficiently on a larger scale. Prof. Robertson also referred to the Japanese, commenting on a recent SAE Journal article which described a Japanese radial aircraft engine.

William E. Lind, Guiberson Diesel Engine Co., presided, and among the guests to speak briefly was James Dodson, pioneer Alaskan flight and mercy pilot, who profusely thanked the engineers and the SAE

for making possible the engines with which operations in the far north have been successful. He said he owed his life to engine dependability and engineers who were responsible for this dependability.

The election as officers of Messrs. Guiberson, Schwedes, and Fuller followed their nomination by a committee of S. V. Jay, Humble Oil and Refining Co.; William Truettner of the Texas A & M College; and Fred H. Lockwood, Guiberson Diesel Engine Co.

The Guiberson company was host for the dinner meeting.

SAE Helps to Build New Uniform Materials Code

A UNIFORM tabulating code to be used by industry in reporting materials to the military services and other government agencies is under development through the cooperative efforts of the Army, the SAE, the AISI, and the ASTM. The development is under the direction of Col. C. H. Tenney, Office of the Chief of Statistical Services, U. S. Army Services of Supply, with the SAE, AISI, and ASTM acting as advisers. The purpose of this new code is to simplify and speed up the work of compiling materials reports by industry, and of tabulating and utilizing these data by military services and government agencies. Frank P. Gilligan, chairman, Iron and Steel Division, SAE Standards Committee, has been appointed SAE representative on this work by SAE President A. W. Herrington.

The code is being designed to serve only for tabulating purposes on IBM machines; there is no intention of supplanting any existing specifications since the new code will cover chemical composition only. The code will supplement the "red book" or "Official Classification List of Raw and Basic Materials," prepared by the Army and Navy Munitions Board, which has been adopted as standard for military services; it will not affect these classifications in any way except to amplify them by providing additional data on chemical composition.

As matters now stand, where the services or government agencies require greater detail on materials than the "red book" provides, each manufacturer makes up his own tabulating code and, consequently, when he submits a report, he has to provide an explanation of his code. The new code is expected to simplify this procedure, eliminating the necessity for an explanation, as well as to facilitate greatly the tabulation and use of the data by military services and government agencies.

It is proposed to use the SAE-AISI numbers as the basis of the tabulating code for steels. The SAE and the AISI are acting as advisers in the development of this steel code. A uniform tabulating code for nonferrous metals also is being developed in which the ASTM is acting as adviser.

To provide a basis for the code, cross indexes of chemically equivalent specifications are being developed by representatives of Ford, General Motors, and Chrysler, using some preliminary work done by the Air Forces.

When completed, these cross indexes will be submitted, in the case of the steels, to the SAE and AISI for review, revision, and recommendation; and, in the case of the non-ferrous metals, to the ASTM for similar action.

NEW MEMBERS Qualified

These applicants who have qualified for admission to the Society have been welcomed into membership between June 15, 1942, and July 15, 1942.

The various grades of membership are indicated by: (M) Member; (A) Associate Member; (J) Junior; (Aff.) Affiliate Member; (SM) Service Member; (FM) Foreign Member.

Baltimore Section

Lieb, John Stevens, 1st Lt. (J) U. S. Army, Ordnance Department, Proving Center, Aberdeen Proving Ground, Md.

Buffalo Section

Hamlin, Chauncey J., Jr. (M) test engineer, Sterling Engine Co., 1270 Niagara St., Buffalo, N. Y.

Queen, Roy Lee (J) assistant engineer, U. S. Air Corps, Chevrolet Motor & Axle Division, General Motors Corp., Station "B," Buffalo, N. Y.

Canadian Section

Gillespie, Samuel (M) general manager, Kingsley Mfg. Co., Ltd., West Hill, Ont. (mail) R.R. No. 2.

Gung, Simon F. (J) senior aircraft draftsman, de Havilland Aircraft of Canada, Ltd., Toronto, Ont. (mail) 106 Chiltern Hill Rd.

Ironside, John, Lt. (A) Royal Canadian Ordnance Corps, No. 1 Proving Ground Detachment, 269½ Dalhousie St., Ottawa, Ont.

Lavendel, Alexander (A) civilian instructor, School of Aeronautical Engineering, Royal Canadian Air Force, Montreal, Que. (mail) 4895 de Bullion St.

Chicago Section

Allyn, Jerome D. (J) 4404 Woodland Ave., Western Springs, Ill.

Cella, William George (A) manager, Underwriters Safety Device Corp.; vice president, Auto Body & Service Co., Chicago (mail) 127 N. Mayfield Ave.

Eastman, James M (J) design engineer, Bendix Products Division, Bendix Aviation Corp., South Bend, Ind. (mail) 1114 Woodward Ave.

Leiner, Henry G. (J) mechanic in cylinder testing, Buick Motor Division, General Motors Corp., Aviation Engineering Plant, Melrose Park, Ill. (mail) 2332 Wesley Ave., Berwyn, Ill.

Malick, Emil (J) research and experimental engineer, Bendix-Stromberg Carburetor Division, Bendix Aviation Corp., South Bend, Ind. (mail) 428 La Monte Terrace.

Rosenberg, Charles Bertram (J) research engineer (Diesel fuels and lubrication), Pure Oil Co., 35 E. Wacker Dr., Chicago (mail) Box 266, Winnetka, Ill.

Ruskamp, William H., Jr., 2nd Lt. (J) U. S. Army, Office, Chief of Engineers, Washington (mail) 1715 W. 94th St., Chicago.

Suliss, Stanley (J) co-operative fuels research engineer, Sinclair Refining Co., East Chicago, Ind. (mail) 4865 Indianapolis Blvd.

Cleveland Section

Emmons, Richard Fox (J) technical apprentice, White Motor Co., Cleveland (mail) Quad Hall, 7500 Euclid Ave.

Gibson, Thomas M. S. (S M) chief engineer, U. S. Army, Ordnance Department, Automotive Division, Terminal Tower, Cleveland (mail) Apt. 534-A New Amsterdam Apts., Euclid at E. 22nd St.

Hall, Robert T. (J) design engineer, Thompson Products, Inc., Cleveland (mail) 1375 Thoreau Rd., Lakewood, O.

Sedlack, Joseph (A) president, Sedlack Machine Products Co., 3809 Clarke Ave., Cleveland.

Dayton Section

Breitenbach, Robert George (J) production engineer, Wright Aeronautical Corp., Division of Curtiss-Wright Corp., Lockland, Ohio.

De Roze, Louis (M) project engineer, Wright Aeronautical Corp., Division of Curtiss-Wright Corp., Cincinnati (mail) 3510 Ravenwood Ave.

Feroy, Arne (M) designer, General Machinery Corp., Hamilton, Ohio.

Haynes, Clyde G. (A) maintenance, Wright Aeronautical Corp., Division of Curtiss-Wright Corp., Lockland, O. (mail) P.O. Box 193, Cincinnati.

Miller, E. L. (M) chief engineer, Dayton Steel Foundry Co., 1366 Miami Chapel Rd., Dayton (mail) 1910 Brookline Ave.

Stoner, M. LeRoy (J) lead engineer, equipment, Curtiss-Wright Corp., Columbus, O.

Withers, Cleemann (M) executive vice president, United Aircraft Products, Inc., 480 Huffman Ave., Dayton.

Detroit Section

Ball, Laurence M. (M) head of sound and vibration laboratory, Chrysler Corp., Detroit (mail) 255 Greenwood, Birmingham, Mich.

Bittner, Edward Frank (M) chief metallurgist, Norge Division, Borg-Warner Corp., Detroit (mail) 5105 Grayton.

Denman, Harry B. (M) chief chemist, Detroit Gasket & Mfg. Co., 12640 Burt Rd., Detroit.

Douglas, Raymond Mills (M) executive engineer, Pioneer Engrg. & Mfg. Co., Detroit (mail) P.O. Box 119, Alpena, Mich.

Fill, Lynn A. (M) chief engineer, Motor Products Corp., 11801 Mack Ave., Detroit.

Lewis, Ralph Clinton (M) engineer, owner, Development Engrg. Laboratories, 3941 Grand River Ave., Detroit.

Pattison, Wayne W. (M) project and design engineer, Bohn Aluminum & Brass Corp., 2512 E. Grand Blvd., Detroit (mail) 15633 Eastwood.

Schaffer, David J. (J) engineer, Continental Motors Corp., 3421 W. Chicago, Detroit.

Sintz, Edward C. (M) junior project engineer, Cadillac Motor Car Division, General Motors Corp., 2860 Clark Ave., Detroit (mail) 16215 Westbrook Ave.

Turner, Charles P., Capt. (S M) U. S. Army, Air Corps, 8505 W. Warren, Detroit (mail) 3440 Santa Maria.

Van Ee, Rene M. (J) mechanic and

dynamometer operator, Briggs Mfg. Co., Mack Plant, Detroit (mail) 10444 Marne.

Zaoral, **Charles T.** (A) co-ordinator, General Motors Overseas Operations, 4-235 General Motors Bldg., Detroit.

Indiana Section

Howe, **John D.** (M) production engineer, Allison Division, General Motors Corp., Indianapolis.

Murray, **William Hughes** (J) junior test engineer, Allison Division, General Motors Corp., Indianapolis (mail) 64 E. 73rd St.

Metropolitan Section

Anderson, J. Wallen (M) project engineer, Titeflex Metal Hose Co., 500 Frelinghuysen Ave., Newark N. J. (mail) 621 Westminster Ave., Elizabeth, N. J.

Barrett, Hillard E. (J) draftsman, Wright Aeronautical Corp., Division of Curtiss-Wright Corp., Paterson, N. J. (mail) 283 S. Center St., Orange, N. J.

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Viall, G. K. (M) vice president, Chain Belt Co., Milwaukee (mail) 1600 W. Bruce St.

The Secret of GOOD SUPPRESSORS

for Eliminating Ignition Radio Interference on Mobile Military Equipment

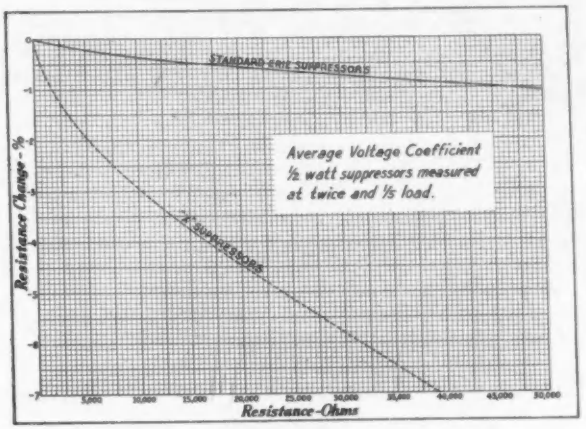
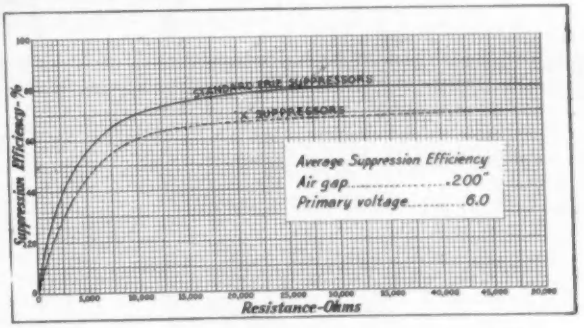
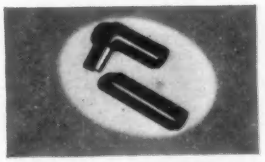


Fig. 1 ⬆

Fig. 2 ➡





ERIE SUPPRESSORS

THE function of an ignition interference suppressor is to cut down the amplitude of the high frequency spark discharge without seriously reducing the energy in the low frequency discharge, necessary for proper ignition. The suppressor must therefore, maintain substantially constant resistance, during the entire discharge period. Consequently, a low voltage coefficient is required. Figure 1 shows comparison of Erie Suppressors which have a low voltage coefficient, and "X" suppressors having high voltage coefficient.

Laboratory measurements show that it is unnecessary to use excessively high resistance values to obtain adequate suppression, when using Erie Suppressors.

Maximum efficiency is reached at approximately 20,000 ohms, as shown in Figure 2. The dotted line shows results obtained with "X" suppressors having a high voltage coefficient. This type would require the use of 50,000 ohm value to obtain reduction of ignition noise equal to 10,000 ohm Erie Suppressors. Specify Erie Suppressors for efficient elimination of ignition in nearby radio communications equipment.

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Northern California Section

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Bisson, Edmond E. (J) assistant mechanical engineer, National Advisory Committee for Aeronautics, Langley Field, Va. (mail) 2110 Kecoughton Rd., Hampton, Va.

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Stone, Charles S. (J) Diesel engine research engineer, Caterpillar Tractor Co., Peoria, Ill. (mail) 116 Stever.

Waters, Marshall J., Lt.-Com. (S M) officer in charge, yard testing laboratory, U. S. Navy, Industrial Department, Navy Yard, Pearl Harbor, T. H.

Williams, Louis B. (A) supervisory instructor, U. S. Army, Seventh Corps Area, Motor Transport School, Fort Crook, Nebr. (mail) Austin No. 404, 3701 Davenport, Omaha, Nebr.

Applications Received – page 36

Aircraft Engineering

FOUNDED 1929

The Technical and Scientific Aeronautical Monthly

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During the War, a special feature is being made of reproductions and translations from the Foreign Technical Press.

BUNHILL PUBLICATIONS LIMITED

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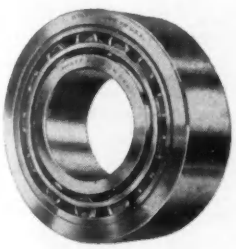
ENGLAND

YOUR ROLLER BEARINGS HAVE A BIG JOB TO DO. DON'T NEGLECT THEM! KEEP THEM CLEAN . . . WELL LUBRICATED . . . PROPERLY ALIGNED! THIS IS NO TIME TO TAKE CHANCES!

WHILE anti-friction bearings keep factory wheels turning, transportation rolling and farm machinery producing, they have the added wartime job of keeping armies on the go, aircraft aloft and battle fleets afloat.



Vital to the arming, transporting and feeding of our forces . . . with Victory demanding round the clock operation, day after day . . . even sturdy bearings like Hyatts, *which run for long periods without attention under normal conditions,* need a little care today.

Be sure bearings are properly sealed and lubricated. Be sure bearings fit snugly. .for looseness might cause excessive wear and misalignment. Keep bearings free from grit and dirt both in assembly and in operation.

With Hyatts assigned to two important jobs: beating friction and helping to beat the Axis...don't neglect them! Our Engineering Department will be glad to help you on any bearing application or maintenance problem.

Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

THIS IS THE 50TH YEAR OF HYATT ROLLER BEARINGS

APPLICATIONS Received

The applications for membership received between June 15, 1942, and July 15, 1942, are listed below. The members of the Society are urged to send any pertinent information with regard to those listed which the Council should have for consideration prior to their election. It is requested that such communications from members be sent promptly.

Baltimore Section

Finkler, Irving Henry, assistant engineer, U. S. Army, War Department, Aberdeen Proving Ground, Md.

Buffalo Section

Chandler, J. Harvey, factory manager, General Drop Forge, division of Brown-Lipe Gear Co., Buffalo.

Goffin, Robert Thomas, process engineer, Sterling Engine Co., Buffalo.

Redford, Everett R., production manager, Sterling Engine Co., Buffalo.

Canadian Section

Halip, Nickolas Joseph, body engineer, Ford Motor Co. of Canada, Ltd., Windsor, Ont.

Riley, Ronald T., secretary-treasurer, Canadian Pratt & Whitney Aircraft Co., Ltd., Longueuil, Que.

Schroter, Bernard H., F/Lt., Royal Canadian Air Force, School of Aeronautical Engineering, Montreal, Que.

Chicago Section

Daniels, Ted E., liaison engineer, Bendix Products Division, Bendix Aviation Corp., South Bend, Ind.

Greer, John W., designer, Electro-Motive Division, General Motors Corp., LaGrange, Ill.

Traise, Earle F., Wilkening Mfg. Co., Chicago.

White, Robert N., chief test inspector, Buda Co., Harvey, Ill.

Cleveland Section

Evans, Dafydd, engineer, Osborn Mfg. Co., Cleveland.

McClish, Thomas H., junior administrative procurement inspector, U. S. Army Air Forces, Materiel Division, Detroit, Mich. Mail: Box 176, Lyndhurst, Ohio.

Dayton Section

Corso, Stephen, assembly foreman, Wright Aeronautical Corp., division of Curtiss-Wright Corp., Cincinnati, Ohio.

Sawdon, Will W., assistant project engineer, Wright Aeronautical Corp., division of Curtiss-Wright Corp., Lockland, Ohio.

Detroit Section

Beechler, J. S., special sales representative, Ranco, Inc., Columbus, Ohio. Mail: 18980 Sussex Ave., Detroit.

Borden, David M., engineer, Chrysler Corp., Detroit.

Grogan, Richard F., draftsman, Pontiac Motor Division, General Motors, Corp., Detroit.

Homent, Joseph, assistant foreman, tool department, Federal Engineering Co., Detroit.

Johnson, Miles E., assistant engineer, Continental Aviation & Engineering Corp., Detroit.

Kotowski, Bruno, production supervisor, Murray Corp. of America, Detroit.

Metropolitan Section

Arbuckle, Philip Harlow, process engineer, Wright Aeronautical Corp., division of Curtiss-Wright Corp., Paterson, N. J.

Barker, Robert White, senior member, research department, Adams Express Co., New York City.

Fleuriot, Robert George, liaison engineer, Wright Aeronautical Corp., division of Curtiss-Wright Corp., Paterson, N. J.

Golzio, Ralph John, assistant project engineer, Wright Aeronautical Corp., division of Curtiss-Wright Corp., Paterson, N. J.

Heikin, Jacob, junior administrative procurement inspector, U. S. Army Air Forces Inspection Office, c/o Wright Aeronautical Corp., division of Curtiss-Wright Corp., Paterson, N. J.

Kunna, Frank John, chief field service engineer, Eclipse Aviation, division of Bendix Aviation Corp., Bendix, N. J.

Junge, Harold P., supervisor of transportation, General Baking Co., New York City.

Larger, Joseph George, detail draftsman, Wright Aeronautical Corp., division of Curtiss-Wright Corp., Paterson, N. J.

McArdle, Charles J., assistant director transportation, General Baking Co., New York City.

Ottoson, Carl C., automotive designer, City of New York, Department of Sanitation, New York City.

Reid, William Charles, vice president, Metallizing Engineering Co., Inc., Long Island City, N. Y.

Troy, Leonard, engineer in charge of weights and structures, aeronautical division, Snead & Co., Orange, Va. Mail: 2359 E. 18th St., Brooklyn, N. Y.

Wuerz, Oscar W., experimental engineer, Cab Service & Parts Corp., New York City.

Milwaukee Section

Hein, Louis T., chief inspector, Twin Disc Clutch Co., Racine, Wis.

McMillan, Andrew, designing engineer, Chain Belt Co., Milwaukee, Wis.

Petersen, Esbern A., assistant chief engineer, tractor division, Massey-Harris Co., Racine, Wis.

Philadelphia Section

Willis, Harry E., maintenance superintendent, Northland Petroleum Transport Co., Lancaster, Pa.

Pittsburgh Section

Gill, Leo Albert, motor vehicle maintenance, Municipal Garage & Repair Shop, Pittsburgh.

New England Section

Rice, J. Herbert, general manager, Roger Williams Oil Co., Providence, R. I.

Ottmar, Jerome, engineering and sales department, Spencer Thermostat Co., Attleboro, Mass.

Northwest Section

Cruver, Charles E., service manager, Huletz Auto Electric Co., Seattle, Wash.

Jones, M. D., service manager, J. C. Couse Motors, Bremerton, Wash.

Spencer, Donald Bruce, production engineer, Western Gear Works, Seattle, Wash.

Southern California Section

Chandler, Kenneth, owner, Ken Chandler Auto Repair, Los Angeles.

Corley, Joseph Warren, instructor, Los Angeles Board of Education, Los Angeles.

Dillow, William H., owner, manager, W. H. Dillow Co., Altadena, Calif.

Southwest Group

Baldwin, Harold C., sales engineer, Continental Oil Co., Ponca City, Okla.

Texas Group

Hunt, Wayne C., sales manager, aircraft division, Guiberson Corp., Dallas.

McDaniel, Edward Foy, assistant chief engineer, aircraft and heater division, Guiberson Corp., Dallas.

McKinney, H. H., assistant chief engineer, Guiberson Diesel Engine Co., Dallas.

Nixon, John M., production superintendent, Guiberson Diesel Engine Co., Garland, Texas.

Sheridan, Harry A., assistant service manager, Guiberson Diesel Engine Co., Dallas.

Thompson, M. J., Prof. of Aeronautical Engineering, University of Texas, Austin, Texas.

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Outside of Section Territory

Burnett, Edward Lee, engineer, The Dow Chemical Co., Bay City, Mich.

Evans, Wendall G., assistant experimental engineer, Lycoming Division, Aviation Mfg. Corp., Williamsport, Pa.

The Gates Rubber Co., Denver, Colo.

Hunt, C. Kenneth, sales, machine shop service, Automotive Supply Co., Inc., Albany, N. Y.

Koffel, William K., junior engineer, National Advisory Committee for Aeronautics, Cleveland, Ohio. Mail: 424 West Dutton St., Kalamazoo, Mich.

Foreign

Parnacott, Douglas S., experimental engineer, Avimo Ltd., Taunton, Somerset, England.

Rose, Geoffrey William, Capt., General Staff Officer, War Office, London, England.

SAE JOURNAL *Pre-Prints*

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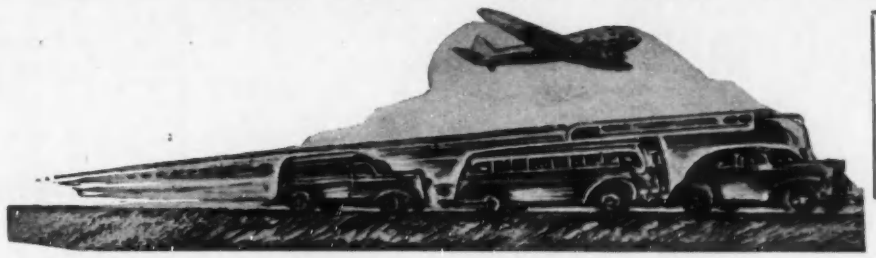


News of the **OCTOBER** *Issue*

By Norman G. Shidle

Win By Staying Free

THE SAE is the product of the minds of many men.

But its war achievements are more than just the result of co-operation.

They are the result of the voluntary cooperation of a lot of rugged individualists – men, who, of their own free will, decided to pool their efforts.

The aim of that voluntary cooperation is to help win World War II.

Its effect may be far more lasting – even more important in terms of world history. Pushed to heights of success towering above those of socialized groups at home or abroad, the work of our cooperating individualists can provide a dramatic example for American laymen to think about – and for American politicians to heed – when the economic and technical framework for our post-war economy is being built.

"When the history of American mobilization in war can be fully revealed," the "New York Times" said editorially a few weeks ago, "great credit will go to the SAE and kindred bodies for their patient and persistent efforts to bring a measure of order out of chaos."

If free-will cooperation in the war effort continues to pile up successes while bureaucratic compulsions produce relatively meager results, self-reliant individuals and groups in the post-war world may hope once again to be viewed with more of approval than of suspicion.

Engine Test Methods Coordinate Engineering of Engine and Oil Men

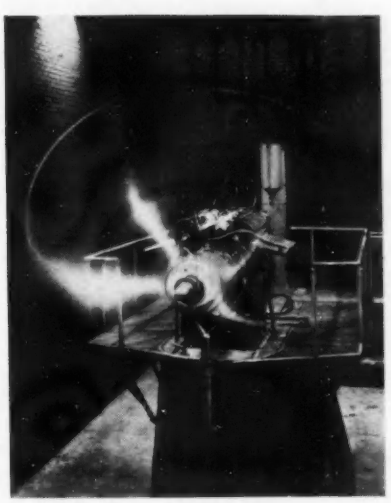
"THERE was a tendency for the engine manufacturers to blame the oil for all their troubles, and for the refiners to claim that the engine designs were at fault." Thus two research engineers of General Motors Laboratories and The Pure Oil Co., respectively, open their October SAE Journal article on "The Testing of Heavy-Duty Motor Oils."

That was the condition two or three years ago, before the SAE brought together committees representing the petroleum industry and engine manufacturers to devise methods for determining suitable composite design limits of engines and of oils from a heavy-duty lubrication standpoint.

How and what test methods have been provided to give information that is satisfactory to both groups of engineers is told with technical gusto by Harry C. Mougey and Joseph A. Moller in the forthcoming issue. At a time when cooperation of the most intimate nature is necessary between engine manufacturer and refiner, this article, by the chairmen of the respective SAE committees, gives heartening proof of coordinated engineering at work. And, not the least important, it features the actual case-study results of these heavy-duty testing methods.

Allison Testing Facilities Described by Buttner

OVER a period of years Allison Division of General Motors has developed unique facilities for testing aircraft engines. Details of these facilities are of special interest and value to every company unit of that large and rapidly growing contingent of our war industry engaged in producing and testing aircraft engines.



Concrete Engine Stand

That is why an article, "Production Testing Facilities of Allison Division of General Motors," by H. J. Buttner, will be one of special significance to readers of the October SAE Journal.

Progressive thought and experimentation have led this GM satellite to important improvements in building arrangement and construction, engine stands and mounts, operational and temperature regulating equipment, plumbing, filters, weighing equipment, instrumentation, and sound treatment.

Allison shares its knowledge with all others in this important field to further our war effort. Watch for the Buttner article in October!

'Best' Gasolines . . .

MOTORISTS who, until rationing put an end to their curiosity, devoted time and worry to a continuing search for gasoline of an elusive quality known as "best," can find solace and satisfaction in the report of the 1941 detonation tests of the Cooperative Fuel Research Committee, scheduled for the October SAE Journal.

The "best" fuel has been in the tanks of the gasoline Argonauts all the time!

The report describes road tests with more than 100 automobiles. They were tested just as they came from the hands of their owners, then re-tested after ignition settings had been put back the way the car-manufacturers adjusted them in the first place. The tests revealed that the average "regular" grade gasoline will operate satisfactorily free

(*Concluded on page 10*)

NOVEMBER SAE JOURNAL Will Be a Special Aeronautical Issue

SAE Coming Events

Oct. 1-3 — National Aircraft Production Meeting (and Aircraft Engineering Display)
Hotel Biltmore – Los Angeles, Calif.

■

Oct. 7-8 — War Transportation & Maintenance Meeting
(This meeting has been officially designated as the Society's Semi-Annual Meeting for 1942)
Hotel Pennsylvania – New York

■

Oct. 22-23 — National Fuels & Lubricants Meeting
Tulsa Hotel – Tulsa, Okla.

■

Jan. 11-15, 1943 — War Production-Engineering Meeting (and Engineering Display)
Book-Cadillac Hotel – Detroit, Mich.

■

Canadian – Sept. 18

Hamilton Golf and Country Club, Ancaster, Ont.; dinner 6:30 p.m. The Impact of War on the Automotive Industry – Alexander Gray, president, Gray Forgings & Stampings, Ltd.

Chicago – Sept. 25

Tam O'Shanter Country Club, Chicago. Golf Tournament. Dinner.

Indiana – Sept. 17

Antlers Hotel, Indianapolis; dinner 6:45 p.m. Design Features of the Mitsubishi Kinsei Engine – W. G. Ovens, staff engineer, Wright Aeronautical Corp. Engine on exhibition.

Metropolitan – Sept. 17

Hotel Edison, New York; dinner 6:30 p.m. Design Features of United Nations and Enemy Combat Planes – A specially prepared paper by an officer of the U. S. Army Air Forces who is an authority on the subject.

Milwaukee – Sept. 4

Westmoor Country Club, Milwaukee. Annual Golf Party. Dinner 7:00 p.m.

Northern California – Sept. 8

Hotel Leamington, Oakland; dinner 6:30 p.m. Bearings for Heavy Duty Engines – R. A. Watson, factory manager, Pacific Division, Federal Mogul Corp.

Oregon – Sept. 11

Meeting at Consolidated Freightways Plant, 2029 N. W. Quimby, Portland. Fleet Maintenance – Shop Practices – Reclamation – Metal Spray. Speakers: J. L. S. Snead, Jr., maintenance engineer, P. W. Eaton, master mechanic, and J. L. First, shop foreman, of Consolidated Freightways, Inc.

Analyze Behaviorism of Oil in a Bearing

THERE'S no observable space for oil in modern tightly-fitted automotive bearings, yet the oil not only gets in but oils the metal surfaces and prevents wear! How and why are questions for which answers long have been sought. Some of the answers are given by J. T. Burwell, of Massachusetts Institute of Technology, in a paper scheduled for the October SAE Journal.

Dr. Burwell reports that both the nature of the bearing surface and of the oil are important factors. The "profile" of the metal as created by the "hills and valleys" on its surface, the relationship between "scratch direction" and direction of motion, and the presence of ploughed-in chips, or "fuzz," have a great deal to do with the efficiency of oiling, it seems. Smoothly-finished metal surfaces, fine-ground, honed, superfinished, or lapped, make it easier for oil to spread, but harder to stay spread, Dr. Burwell says.

The oil functions, he explains, because of its high energy of adhesion, or characteristic of "wettability"; its molecular structure which forms a close-packed film of relatively great thickness; and its surface-active molecules which repair the film on metal quickly enough to prevent metal-to-metal contact and resulting damage.

When oil is placed on metal, Dr. Burwell continues, it spreads until inherent forces are in equilibrium. The shape that it assumes is governed by surface tension, specific gravity, and the angle at which the oil's surface meets the metal surface. Oil spreads farther, faster, and better on a smooth metal surface, but stays spread better on a rougher surface because the "hills and valleys" tend to prevent its return to equilibrium.

However, he points out, rough surfaces, with higher hills lifted above lower valleys, reduce the extent of the true areas of contact and make less oil do more work. Heat and friction tend to destroy the oil film between small areas of contact created by the "hills." If this film is not quickly replaced by oil from the "valleys," more heat, more friction, and other troubles – including local welding – develop.

Men, Not Charts, Create Engineering Departments

ABLE, cooperative men who understand the "why" of what they are doing are more essential to the successful functioning of automobile engineering departments than are predetermined plans and organization charts, it is reported in a paper slated for the October SAE Journal.

This article, written by C. R. Paton, R. F. Kohr, and M. A. Forester at the request of the SAE Passenger-Car Committee, presents the results of a study of seven automobile engineering organizations and their procedure and reaches these conclusions:

- Successful engineering departments evolve around available men.
- Cooperation is more important than organization charts in making the departments function; charts are effective in guiding policy.
- Design and experimental functions cannot be entirely divorced, and "horizontal" organization of engineering departments along these lines ordinarily is preferable to "vertical" organization by products and parts.
- Internal research functions and groups have definite advantages over external research organizations.
- The committee method of reaching decisions on major design questions has many advantages, including creation of understanding of "why," which actually increases the ability of personnel.
- Closer association of the functions of engineering, production, and inspection is advantageous.
- Under competitive conditions, production-cost estimating should be centered in the engineering organization as a service function available to designing and developing groups, so that changes effecting savings may be made while designs are susceptible to modification.
- Laboratory facilities save time and cost over extensive road-test procedures.
- Regardless of the size of the organization, an adequate system of test records is an economy.
- Positive use of dual dollar and time budgets is a simple control procedure.

(Concluded from page 9)

from knocks in 75 to 90% of the cars on the road.

These road tests were no nonchalant efforts at "bingo!" They were carefully planned and conducted experiments with 24 Fords, 15 Chevrolets, 13 Plymouths, seven Buicks, five Chryslers, and nine cars of other makes. Snatched from their owners and tested "as was," better than one-third operated satisfactorily on gasolines of less than 65 octane, more than 80% on gasolines of less than 70 octane number.

Tested again after initial spark timing carefully had been set to the same point as when the car left the assembly line, 40% of the cars operated without knocking on 62-octane gasoline; 50% on 63; 60% on 65; 70% on 67; 80% on 69; and 90% on 72 octane.

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